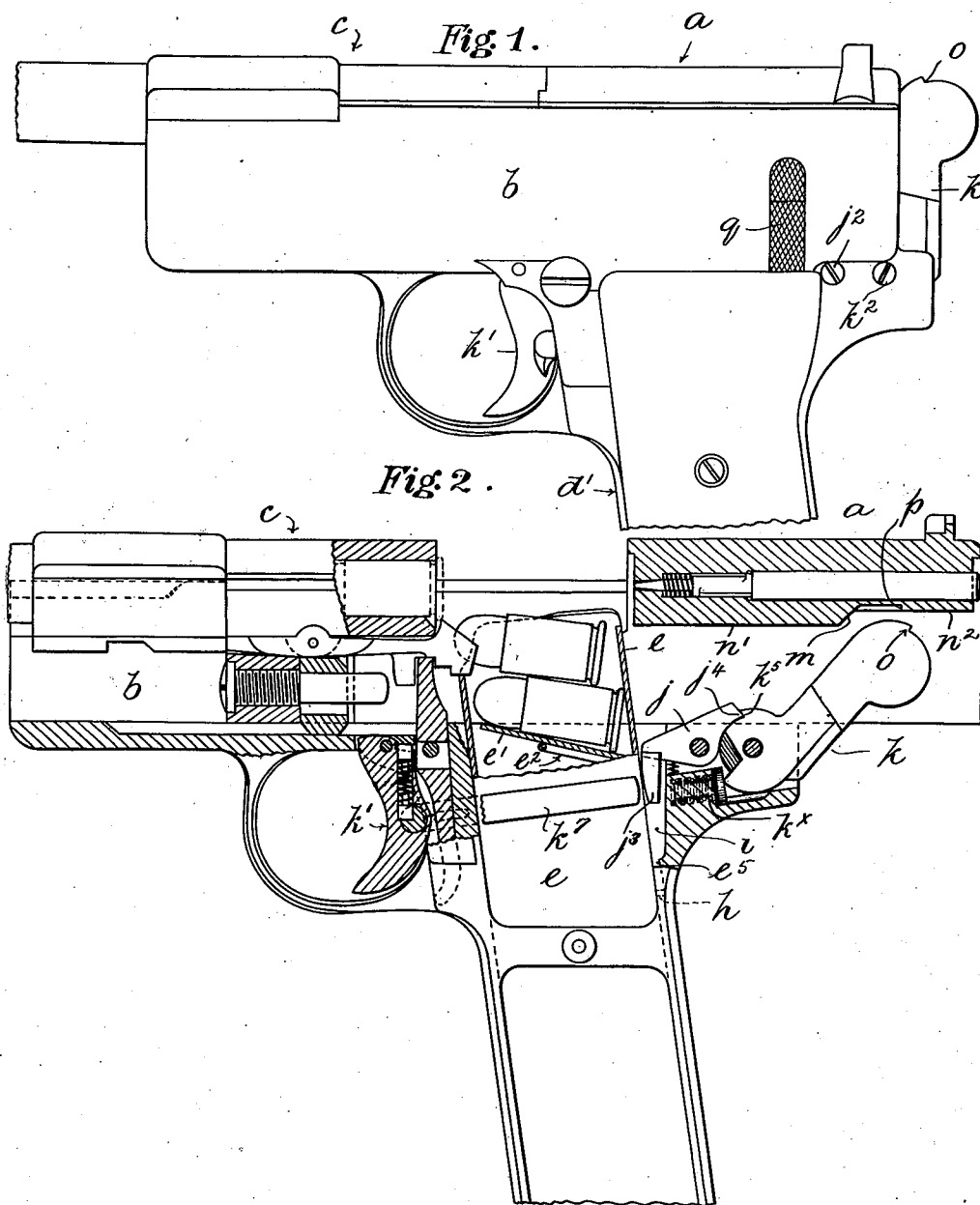


No. 827,488.

PATENTED JULY 31, 1906.

W. J. WHITING.
AUTOMATIC FIREARM.
APPLICATION FILED SEPT. 19, 1904.

3 SHEETS--SHEET 1.



WITNESSES

James L. Morris, Jr.
C. S. Kester.

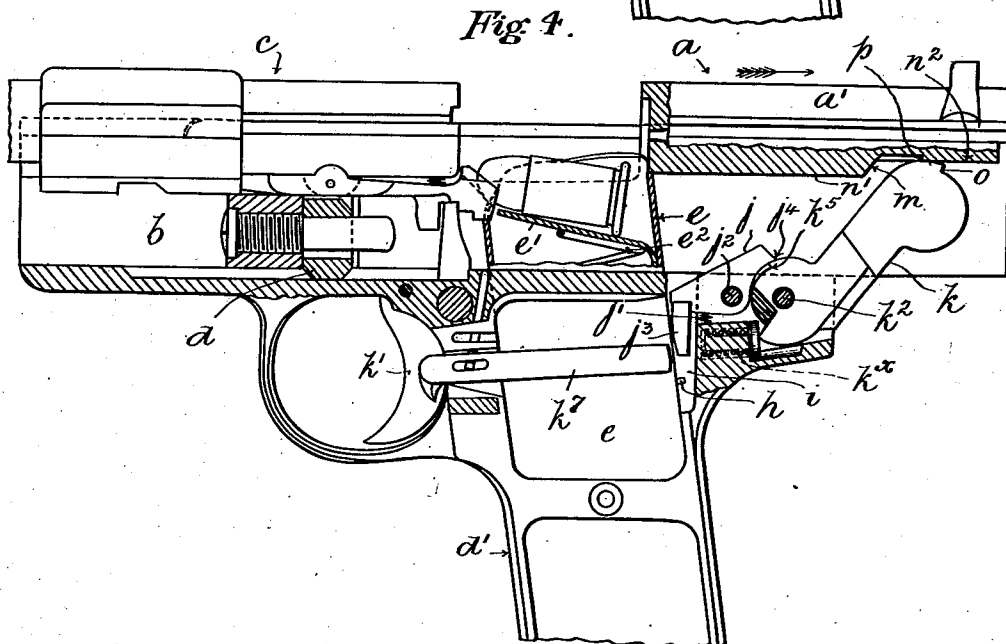
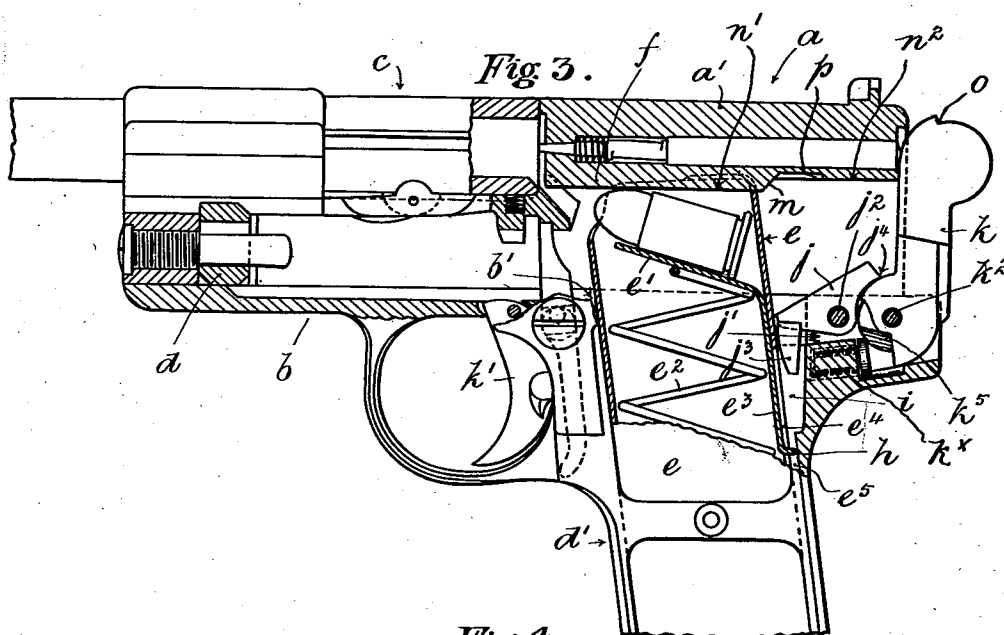
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By James L. Norris,
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3 SHEETS—SHEET 2.



WITNESSES

James L. Norris, Jr.
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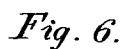
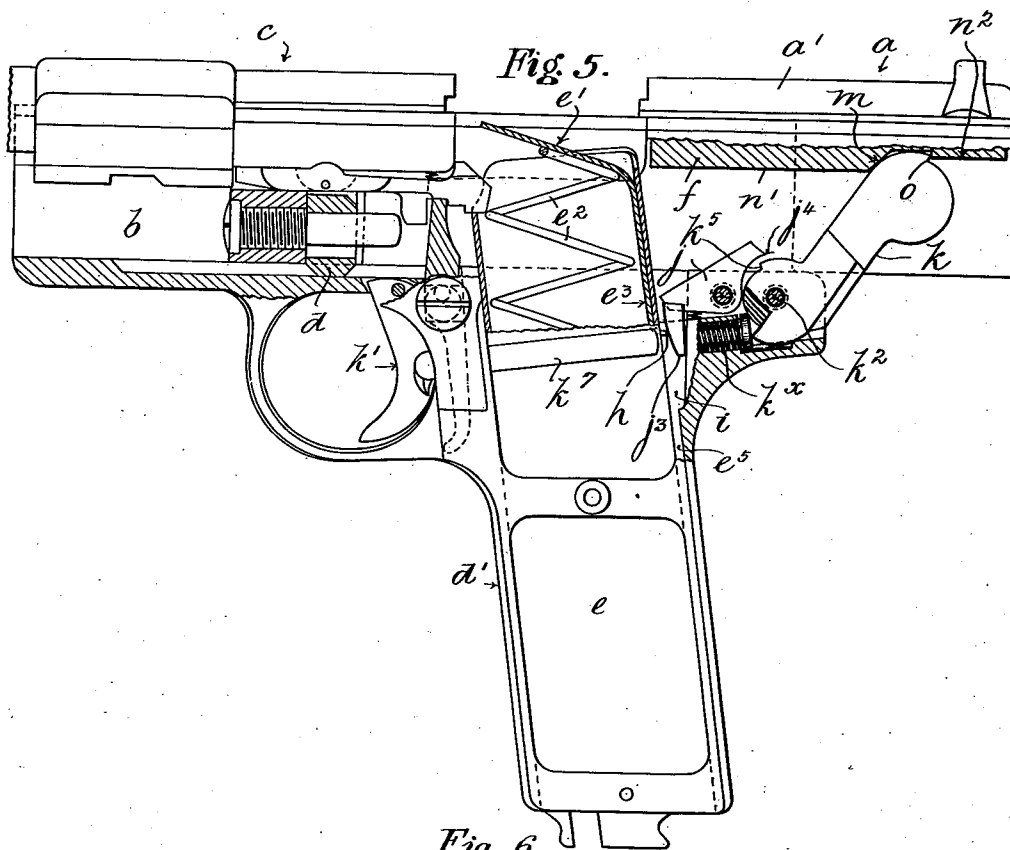
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Att.

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3 SHEETS—SHEET 3.



WITNESSES

James F. Norris, Jr.
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UNITED STATES PATENT OFFICE.

WILLIAM JOHN WHITING, OF BIRMINGHAM, ENGLAND.

AUTOMATIC FIREARM.

No. 827,488.

Specification of Letters Patent.

Patented July 31, 1906.

Application filed September 19, 1904. Serial No. 225,089.

To all whom it may concern:

Be it known that I, WILLIAM JOHN WHITING, director of company, a subject of the King of Great Britain, residing in Weaman street, Birmingham, England, have invented certain new and useful Improvements in Automatic Firearms, of which the following is a specification.

This invention has relation to automatic pistols and other firearms of that type in which the sequence of operations involved in the firing of a shot and the reloading of the arm—viz., the unlocking and opening of the breech after discharge, the extraction and ejection of the empty cartridge-shell, the cocking of the hammer, the insertion of a fresh cartridge from the magazine into the barrel-chamber, and the reclosing of the breech—are performed automatically by the movements of a reciprocating or traversing breech block or slide first in a backward direction under the influence of the recoil energy developed by the discharge of a cartridge and then in a forward direction under the influence of a return-spring which is rendered active by the initial or rearward movement of the said block.

The principal object of the present invention is to provide firearms of this type with novel and simple, but effective, means for positively indicating when the magazine is empty or when the last cartridge has been fed up from the magazine into the barrel and fired, and this object it is proposed to attain by special mechanism which automatically locks the breech-block or breech-slide in its open position or at the end of its rearward movement on the same being driven back by the recoil energy developed by the discharge of the said last cartridge.

According to the said invention the hammer of the arm is utilized as a catch or fastening for engaging and automatically holding the breech-slide in its open position when the magazine is empty, and in order to admit of the hammer operating in this manner the spring-actuated platform or follower, by which the cartridges are fed up one by one into the barrel, is so arranged that on the discharge of the last cartridge it will engage with the sear of the lock or firing mechanism in such a way as to prevent the said sear from returning into bent with the hammer, which is thus free to be placed by the mainspring in a position in which it will engage with the breech-slide when at the end of its rearward

movement and lock or retain same in its open position.

Figure 1 of the accompanying drawings represents a side elevation of a part of an automatic pistol constructed and arranged in accordance with this invention with the breech-block or breech-slide in its closed position. Fig. 2 is a longitudinal vertical section of the pistol, showing the breech-slide at the commencement of the forward movement after having cocked the hammer. In this view also the hammer is shown engaged by the sear of the lock mechanism and held in its normal full-cocked position, so that it will not interfere with the return movement of the said slide, which is free to return to its closed position after every discharge of the arm so long as any cartridge remains in the magazine. Fig. 3 is a longitudinal vertical section of the pistol with the breech-slide closed and showing the relative positions of the parts when only one cartridge remains in the magazine. Fig. 4 is a similar view of the pistol to that represented in Fig. 3; but it shows the breech-slide in the act of being driven backward under recoil energy from the discharge and also in the act of cocking the hammer, while the last cartridge within the magazine is shown raised into the position in which it will be pushed from the said magazine into the chamber of the barrel when the breech-slide makes its forward or return movement. Fig. 5 shows the pistol with the parts in the positions which they assume after the last cartridge has been discharged—that is, with the breech-slide automatically held or retained in its open position by the hammer of the lock mechanism. Fig. 6 is a view of the lock mechanism and safety device for holding the hammer at full-cock.

The same letters of reference indicate corresponding parts in the several figures of the drawings.

The automatic magazine-pistol represented in the said drawings has a reciprocating breech-slide *a*, which works within the rear part of a fixed and channel-sectioned frame or body *b* and is locked when closed to a stationary barrel *c* or to a barrel which has only a limited movement within the said frame by means of a bolt or fastening device, such as *d*, which, however, forms no part of the present invention and need not, therefore, be further described. The grip or handle *d'*, on which the frame or body part is mounted, is made to serve as the receptacle for a detachable

magazine or cartridge-box *e*, which when in position extends upwardly through an opening or slot *b'*, formed in the bottom of the body and behind the chamber of the barrel, so that when the breech-slide is in its open or rearward position the uppermost cartridge is presented and held with the top of its rim in line with a loading-rib *f* or its equivalent on the under side of the elevated part *a'* of the slide which carries the firing-pin and comes behind the barrel, so that on the said slide making its return movement the said cartridge is pushed out of the magazine and into the barrel-chamber.

The magazine is provided with a platform or follower *e'*, upon which the cartridges rest, and which is acted upon or raised by means of a spring *e''* for the purpose of feeding the cartridges up in succession into a position in line with the loading-rib of the breech-slide at each rearward movement of the latter, and in order to admit of the utilization of this spring-actuated platform or follower for blocking the sear of the lock mechanism after the discharge of the last cartridge it is provided with a tailpiece *e'''*, carrying a tooth or extension *h*, which is directed through a slot or opening *e''''*, formed up the back wall of the magazine and (when the magazine is in position) extends into a corresponding groove or channel *e'''''*, cut on the opposed side of the frame of the grip, so that the said tooth works or moves upward within the said groove as it rises with the platform or follower. The upper end of the channel in the frame leads into a recess or small chamber *i*, formed in the upper part of the handle-frame and into which the tail of a rocking hammer-sear *j* depends.

The hammer *k* of the pistol, which is actuated by any suitable form of mainspring, such as *k''*, is mounted and works upon a pivot *k'''*, disposed across the frame at a convenient point behind the handle or grip, while the sear *j*, which is also provided with a suitable spring *j''* and is located behind the handle, is separately pivoted, preferably upon a second pin *j'''*, disposed in front of the hammer-pivot. The said sear is provided forward of its joint with a hanging tailpiece *j''''*, which depends, as above mentioned, into a recess or chamber *i* in the side of the handle-frame and is acted upon for discharging the pistol by means of a bar or limb *k''''*, which is pivoted at its forward end to a trigger *k'''''*, located in front of the handle and extending across the inside of the said handle-frame into the sear-tail chamber. The rearward part of the sear is formed with a nose-piece *j''''''*, adapted to engage with the bent *k''''''* of the hammer and hold the latter at full-cock.

The cocking of the hammer is performed during the backward movement of the breech-slide by the rearward end of the loading-rib on the under side of the latter

striking against the head of the said hammer and forcing same backward, as represented in Fig. 4, until the sear-nose is taken by its spring into engagement with the bent, as represented in Fig. 2; and thus the hammer is held, but in such a position that it offers no impediment to the free forward movement of the breech-slide under the influence of its return-spring after the recoil energy has expended itself.

The combined loading and cocking rib which is formed on the under side of the breech-slide and rides over the hammer during the rearward movement of the said slide terminates at some distance short of the back end of the said slide in an incline *m*, leading up to the under side of the back portion of the slide, and thus the part which reciprocates over the hammer-head is formed with two planes or surfaces *n'* *n''*, of which the forward surface *n'*—i. e., the under side of the loading and cocking rib—is in a lower plane than the other and rearward surface *n''*. To provide for the locking of the slide in its rearward or open position by means of the hammer when the sear is held out of bent, as hereinafter described, the head of the said hammer is formed with a transverse tooth, notch, or shoulder *o*, while the elevated rearward surface or plane on the under side of the breech-slide has a corresponding shoulder, notch, or recess *p* cut across it, and when the hammer-sear is blocked and held out of action on the breech-slide, making its rearward traverse under the influence of the recoil energy from the discharge of the last cartridge, then as soon as the said slide reaches the end of the said movement the hammer is taken by the action of the mainspring into a position in which the tooth or notch at its head comes in front of or within the path of the shoulder on the elevated rear part of the under side of the slide, so that immediately the said slide commences to move forward on its return stroke the notches or shoulders come into engagement, and thus the breech-slide is held and locked in its open position, as represented in Fig. 5. Thus it will be understood that after the firing of each cartridge, with the exception of the last one, the sear acts normally and holds the cocked hammer in such a position or at such an inclination (see Fig. 2) that its retaining-notch is below and clear of the corresponding shoulder of the breech-slide, which is thus free to be moved forward and closed, but when the breech-slide in being driven back by the recoil from the last discharge has moved clear of the magazine-platform (which comes against the under side of the loading and cocking rib on the last cartridge being fed into the barrel) then the said platform is raised by its spring to the top of the magazine, and this final movement causes the follower tooth or extension *h* to rise in front of the sear-tail, as repre-

sented in Fig. 5, the sear being thereby blocked and prevented from returning to its normal position or from falling into bent with the hammer, and is retained in this position so long as the follower-tooth remains in contact with the sear-tail, and the said hammer is then tilted forward and taken into position for engaging with and retaining the breech-slide, as above described.

By the locking of the breech-block in its open position through the medium of mechanism which becomes operative only when the breech-slide is moved clear of the empty magazine a positive and unmistakable indication is afforded of the fact that the last cartridge has been discharged and that the pistol requires to be reloaded, and on the magazine being withdrawn from the handle for the purpose of refilling the follower-tooth connected with the spring-actuated platform is removed from in front of the sear-tail and the sear is immediately restored by its spring to its normal position for retaining the firing mechanism again at full-cock after the disengagement of the hammer from the slide, which is effected by drawing the latter back a short distance from its locked-open position, as this movement causes the hammer to move rearwardly to an extent sufficient to bring its bent into engagement with the sear-nose, so that the sear will retain the hammer clear of the slide and admit of the same being taken back to its closed position by its return-spring.

In conjunction with the lock mechanism above described a safety-bolt *q* may be arranged consisting of a suitably-mounted slide having at its lower end an inward projection or lump *q'*, which extends into the sear-tail chamber in the frame and is adapted when the slide is pushed up to come at the back of the sear-tail and so block the sear when in bent with the cocked hammer and hold the firing mechanism at "safe," as represented in Fig. 6.

The application of the invention to other automatic or magazine firearms differs in no essential respect from its application to an automatic pistol, as herein described.

Having fully described my invention, what I desire to claim and secure by Letters Patent is—

1. A firearm having a breech-slide adapted to be moved rearwardly by recoil, a hammer, a mainspring and a sear for the hammer, a cartridge-magazine having a follower, means for actuating the follower to feed the cartridges out of the magazine, and means actuated by the follower for throwing the sear out of operative relation with the hammer when the magazine is empty, the mainspring serving when the sear is out of operative relation with the hammer to move the latter into locking relation with the breech-slide to prevent forward movement thereof.

2. A firearm having a breech-slide adapted to be moved rearwardly by recoil, a hammer, a mainspring and a sear for the hammer, a cartridge-magazine having a cartridge-supporting follower, spring means to elevate the follower to cause the feed of the cartridges, and means actuated by the follower for throwing the sear out of operative relation with the hammer when the magazine is empty, the mainspring when the sear is out of operative relation with the hammer serving to move the latter into operative relation with the breech-slide to prevent forward movement thereof.

3. A firearm having a breech-slide adapted to be moved rearwardly by recoil, a hammer having a projection, the breech-slide having a recess adapted to be entered by said projection, a mainspring and a sear for the hammer, a cartridge-magazine having a cartridge-supporting follower, means for actuating the follower to feed the cartridges from the magazine, and means actuated by the follower for throwing the sear out of operative relation with the hammer when the magazine is empty, the mainspring when the sear is out of operative relation with the hammer serving to cause said projection to enter said recess to lock the breech-slide against forward movement.

4. A firearm having a breech-slide adapted to be moved rearwardly by recoil, a hammer, the breech-slide having a hammer-cocking rib, a mainspring and a sear for the hammer, a cartridge-magazine having a cartridge-supporting follower, means for actuating the follower to feed cartridges from the magazine, and means actuated by the follower for throwing the sear out of operative relation with the hammer when the magazine is empty, the mainspring when the sear is out of operative relation with the hammer serving to move the latter into operative relation with the breech-slide to prevent forward movement of the latter.

5. A firearm having a breech-slide adapted to be moved rearwardly by recoil, a hammer, the breech-slide serving normally on its rearward movement to cock the hammer, a mainspring and a sear for the hammer, a cartridge-magazine having an upwardly-movable spring-actuated cartridge-supporting member, and means actuated by the said cartridge-supporting member for throwing the sear out of operative relation with the hammer when the magazine is empty, the mainspring when the sear is out of operative relation with the hammer serving to move the latter into operative relation with the breech-slide to prevent forward movement of the latter.

6. A firearm having a breech-slide adapted to be moved rearwardly by recoil, a hammer, a mainspring and a sear for the hammer, a cartridge-magazine having a cartridge-sup-

porting follower, means for actuating the follower to feed cartridges from the magazine, means actuated by the follower for throwing the sear out of operative relation with the hammer when the magazine is empty, the mainspring when the sear is out of operative relation with said hammer serving to move the hammer into operative relation with the breech-slide to prevent forward motion of the latter, and a hand-operable safety-bolt

movable to engage the sear and to hold it out of operative relation with the hammer.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM JOHN WHITING.

Witnesses:

HENRY SKERRETT,

HENRY NORTON SKERRETT.