

FIREARMS PATENTS PART THREE A CASE HISTORY

STUART OTTESON

WHAT IS an *invention*, and how does it come about? Over the years, the courts have struggled to define the act of invention in legal terms. At one time, the Supreme Court applied a "flash of creative genius" criterion. That has since been thoroughly repudiated, in recognition of the fact that the process is usually far more prosaic. Thomas Edison was closer to the truth when he admitted his inventions were more the result of perspiration than of inspiration.

In any event, my "inspiration" came in September of 1976 from a back copy of none other than *Rifle* magazine! I was doing background research on the Colt Sauer rifle, studying a Neal Knox article entitled "The Innovative Colt Sauer" in the March-April 1973 issue (*Rifle* 26). The Colt Sauer had then just been introduced into this country, and Knox found one of its unique and interesting features to be a chambered-round indicator. Neal, however, who never pulled any punches as a writer, condemned the feature perhaps even more than he praised it. While enthusiastic about the idea of being able to "see" into the chamber, he was also highly concerned about the large notch that Sauer had cut from the bolt-rim walls to make this possible.

Thus, realizing it or not, Neal had set the stage in a classic manner for the inventive process, showing the need for a better way to a useful function.

Possibly, a lot of Neal's readers contemplated this Colt Sauer system, and how to improve it. I know I gave some thought, after which I put it on the back burner for several months. Early in 1977, it came to mind again. It seemed to me that the solution had to involve the use of something already existing within the breech to act as a probe for the indicator system, rather than introducing a new probe as Sauer had.

Both the extractor and ejector in most modern rifles move in response to the presence of a cartridge in the chamber as the bolt closes. The extractor, which I was later to learn has been used as an indicator probe in several pistols, undergoes a compound motion, first swinging out wide over the cartridge rim, then back inward to nestle into the cartridge's extraction groove.

A spring-powered ejector pin, widely applied in high-powered-rifle designs in recent years, is on the other hand moved linearly by the base of a chambered cartridge. Also, it is

oriented just about ideally to work with an indicator system, lying in an upper quadrant of the receiver ring (not true of the Colt Sauer, but I never thought in terms of that rifle for my invention anyway, since they were already tooled-up for their own indicator; and more important, their sales volume is but a small fraction of that of some US-made rifles).

The problem thus boiled down to devising a means to get the roughly 0.100-inch rearward movement of the ejector pin to position an indicator on the outer surface of the receiver, where it could be seen and felt. Essentially, I wanted to duplicate the design and operation of the little Sauer indicator button but without its direct penetration into the bolt face to violate the integrity of the breech. From this point on, there really wasn't too much "innovation" involved, just a mundane matter of devising the necessary mechanics to get from point A to point B.

I simply notched the ejector pin, placing a sloped shoulder on one end. Aligned above this notch is an entrapped ball, and above that in the wall of the receiver is an entrapped plunger, spring-loaded inward. When the chamber is empty and the ejector pin is forward, the ball, and thus in turn the indicator plunger, can move inward, leaving nothing protruding from the receiver walls. But with a cartridge in place, the ball is forced out flush with the bolt walls. Unable to recess into the bolt, the plunger thereupon protrudes from the outside wall of the receiver ring.

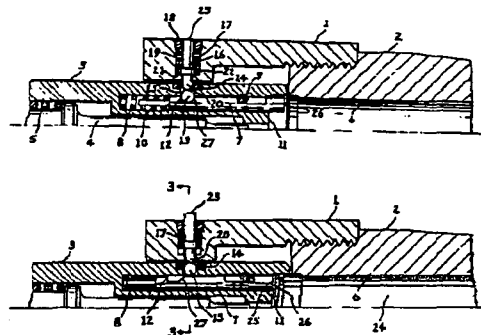
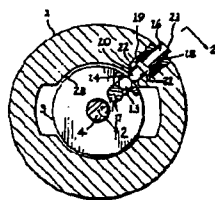
After making a few scale drawings to satisfy myself that all this was mechanically feasible, I decided to file for a patent. While I could have built a prototype at this point, I just decided not to spend the time and money. Also, I didn't give too much considera-



The Sauer chambered-cartridge indicator was simply made and provided a useful function, but it also left an extra hole in the rim of the bolt face.

tion to forking-over several thousand dollars for an attorney. Having some familiarity with the patent system already, I felt that I could end up doing just about as well on my own. I was at the time involved in getting another patent through an attorney at my job, and found that trying to keep track of exactly what he was doing was an unrewarding experience. Besides, I figured that going through the process myself would yield a better insight into the system than I could acquire just about any other way.

Anticipating the possibility of someday writing-up an article like this, I kept a little journal of what happened at each step along the way. Bear in mind, while reading this, that because



Even though Stuart's drawing of his idea was relatively simple by comparison with those typical of many patent applications, he now says that if he were to go through the application routine again, he would hire a professional draftsman to do his drawings rather than draw them himself. He says, "Unless you happen to be inclined toward ink work, it's worthwhile to hire a professional."

I claim:

1. A mechanical indicator means for determining the presence of a cartridge in the chamber of a locked firearm, said indicator means utilizing a plunger ejector assembly fitted into the head of the breech bolt as the probe, and requiring for actuating said indicator means no other penetration of the support-containment system provided for the cartridge case against firing pressure.

Here (above) is Stuart's claim as he originally submitted it. Italics indicate items that the examiner felt lacked antecedence, plus the unacceptable negative limitation ending the claim. For clarity, Stuart cut apart (right) the elements of the printed claim: the preamble (prior art), transitional phrase, and the body of the claim (what was new). The body roughly corresponds to his originally drafted claim.

I claim:

1. In a firearm, a breech bolt and a receiver, said breech bolt moving within said receiver from an unlocked and open position to a closed and locked position, and vice-versa, a barrel secured to a front portion of said receiver, a rear portion of said barrel containing a chamber, a head portion, said head portion being at the front part of said breech bolt and cooperating with said chamber when said breech bolt is in the closed and locked position to contain and support a cartridge when the cartridge is inserted into said chamber of said barrel, a spring-powered ejector means fitted into said head of said breech bolt to eject the cartridge from said firearm by spring power if the bolt is moved from the closed and locked position to the unlocked and open position,

preamble
(prior art)

transitional
phrase

body of
claim
(what is
new)

the improvement comprising

a mechanical indicator means for determining the presence or the absence of a cartridge in said chamber of said firearm when said breech bolt is in said closed and locked position, said indicator means operationally coacting with said ejector means, said ejector means functioning as the probe for said indicating means for determining the presence or absence of a cartridge in said chamber, said indicator means being moveable to an indicating position by said ejector means in response to the presence of a cartridge in said chamber.

I happened to live near the patent office at the time, I availed myself of more help from the people working there than would usually be the case.

March 8, 1977: went to the Application Division (room 4C20, building 2) to get the declaration form that I would need to fill out. They also gave me a gratis copy of *General Information Concerning Patents*.

March 10, 1977: visited Art Unit 221 (room 10C17, building 4) where firearms (classes 42 and 89) are handled, to confirm that the proper classification for *chamber indicators* was 42-1D. There was but a single "shoe" of patents in this subclass. After only a few minutes of searching, I was satisfied that no "prior art" using an ejector pin existed. Most of the patents showed either a special plunger penetrating into the breech, as Sauer had used, or a specially designed extractor. Incidentally, you might notice that I mentioned here a *shoe* of patents, whereas in a previous article I had referred to *bundles* of patents. Patents are kept in cabinets in the examiner's search rooms, each drawer being referred-to as a *shoe*, while they are stored in *bundles* on open shelves or *stacks* down in the public search room.

You can use an examiner's private search room if you desire, if you first obtain specific permission from him.

March 14, 1977: bought several sheets of patent bristol board from a patent draftsman who worked just a few blocks from the patent office. Besides saving me a trip downtown, he was kind enough to give me a few drafting tips. In retrospect, I realize that I should have at this point simply had him do my drawings. The time that I wasted trying to work with india ink just wasn't worth it.

March 17, 1977: took some pencil drawings to Mr Mills, the patent office's head draftsman. He marked them up in a few places, giving his blessing to them otherwise.

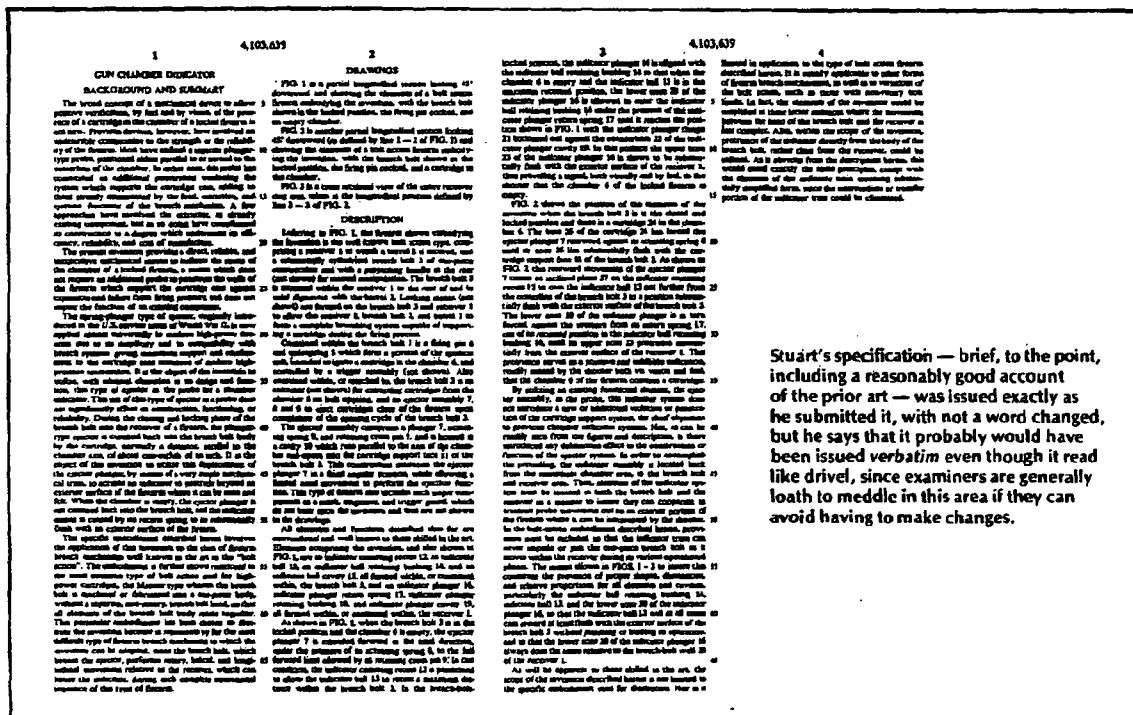
March 24, 1977: took my completed application back to the Application Division. Miss Henry, head of this division, checked it over carefully (I have always had terrible problems filling out forms). I then took the application, together with a check for sixty-five dollars and a stamped, addressed postcard, to the Correspondence and Mail Section (room 2-1B01, building 2).

March 29, 1977: received my post-

card back, stamped with the date and serial number of my application.

August 30, 1977: received the First Office Action. This was a big surprise, because I knew that the backlog in Class 42 applications was running roughly one year. On reading the action, I found that my application had been misassigned to Art Unit 244 (Measurements and Instruments). The mix-up was caused by the fact that I had titled my application "Chamber Indicator" rather than something like "Firearms Chamber Indicator." Once the mistake was made, it was necessary to proceed on that basis, since the patent office would have been less than thrilled with the idea of redoing their paperwork. Whether this turned out to be a disadvantage to me is problematical. The Art Unit 244 examiner, a Mr Yasich, fortunately turned out to be a very reasonable and rational person, and he did at that moment have a smaller backlog than some others. On the other hand, working with the Class 42 examiner, a Mr Joran, would have been easier in some ways because of his familiarity with firearms and their terminology.

In his First Office Action, Mr Yasich rejected all ten of my claims under





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Firearms Patents

(Continued from page 27)

thorough rebuttal of the examiner's rejection on merits (35 USC 103), plus a redraft of my claims in an attempt to overcome his rejection on format (35 USC 112). The amendment was typed up, but instead of sending it in, I called the examiner to arrange a meeting to discuss his office action and my proposed amendment.

October 3, 1977: after the exchange of a few obligatory pleasantries, Mr Yasich got down to business and quickly read my proposed amendment, indicating almost immediate acceptance of my rebuttal of his 35 USC 103 rejection of claims 1-6. I was pleased, but not really that surprised, because the prior art was extremely weak. The three cited patents each featured a cartridge indicator penetrating the breech with a special rod. Since the essence of my indicator was that it *didn't* penetrate the breech, I couldn't get too concerned over the examiner's argument that to go from the prior art to my invention would be "obvious."

Thus, in my amendment, I had respectfully submitted that the prior art cited failed to disclose or suggest my invention. I recited in detail how each of the examiner's references required a special penetration, and thus degradation, of the breech, in contrast to my use of the already existing ejector pin for the same purpose, thus avoiding loss to its integrity. I further contended that since chamber indicators had been used for many years in certain kinds of firearms, their lack of application to high-power arms testified to the fact that a totally acceptable indicator was heretofore unknown.

Mr Yasich's biggest concern actually turned out to be the form of my claims, and he still didn't like them too much even after I had tried to rewrite them. Perhaps the best way to understand exactly what was going on, and the basics of claims drafting and amendment, is to study my number-one (independent) claim as originally submitted with my application, then as it finally ended up after my meeting with the examiner.

Why did the claim as originally written run afoul of 35 USC 112? It was short and to the point; and frankly, I liked it. In finally arriving at something acceptable to the examiner, it ended up four times as long! The

problem was, however, that it began by citing an indicator, plus several other items, for which no antecedence had been established.

Since we were going to have to rewrite the claims anyway, Mr Yasich suggested that the necessary antecedence could most easily be established by converting to "Jepson-style" claims, wherein what is old is clearly separated from what is new. The prior art is recited in a *preamble*, followed by a *transitional phrase*, then finally the *body* of the claim defining what is novel (all in one sentence, of course!).

The transitional phrase, in my case "the improvement comprising," is exceedingly critical to the scope of any claim. As written, I have an *open* claim, so that as long as another later device has all the elements of my claim, it infringes it. Had I instead used the phrase "the improvement consisting of," it would have become a *closed* claim, so easy to design around as to be virtually worthless. A later device would only have to add something not mentioned in the claim to avoid infringing it.

How such seemingly inconsequential differences in phraseology can render a critical difference in a claim's strength is buried in the lore of patent litigation. Just remember that for mechanical devices, an open claim is appropriate. Closed claims are advantageous only very occasionally in the chemical arts.

The body, and thus the scope, of my claim didn't really change too much as a result of the revisions. I continued to simply refer to a "mechanical indicator means" rather than a more narrowly defined element such as "cylindrical indicator pin." Mr Yasich did insist that the elements be functionally tied together, adding terms like *operationally coaxing* and in response to. He pointed out that if claims don't recite how the structural elements cooperate to function as a useful entity, they then merely constitute an unpatentable "aggregation." Finally, the negative limitation at the end of my original draft had no place in a patent claim and was thus eliminated.

At the conclusion of our meeting, which lasted about thirty minutes, the examiner kept one marked-up copy of my amendment for his files. It should be noted here that while Mr Yasich preferred and encouraged Jepson-type claims, that is not necessarily the case with all examiners. Unlike Europe, where this form of claim originated,

other claim formats are still widely used in the US patent office.

October 7, 1977: submitted a retyped amendment officially to the patent office.

December 8, 1977: received notification that all my claims were allowable and that an official notice of allowance would follow in "due course." Up to now, my application had proceeded through the system so efficiently that it looked like I would have an issued patent within a year or less of my initial filing. Most patents take much longer to issue. Besides the patent office's backlog, which often accounts for an initial delay of as much as a year, attorneys seldom respond in much less than their allotted three months, partly because they are very busy, partly because they must (or at least should) communicate thoroughly with their clients, and partly because to do so might make the process appear too easy — not a good idea, considering how much money they are charging. Besides not usually being in any particular rush, attorneys on occasion actually use a variety of delaying tactics to string the process out for many years. This can sometimes be of

advantage to their client in the sense that it forestalls the date when patent protection ultimately ends, since the seventeen-year clock doesn't begin ticking until the day the patent actually issues.

In any event, fortunate or unfortunate, my unusually rapid trip through the patent system came to an abrupt halt after the December 8th notice. Rather than following in a few days, as it normally would, my notice of allowance wasn't to be forthcoming for many months.

January 31, 1978: called Mr Yasich to find out what had happened to my notice of allowance. After several more phone calls to different people, it turned out that on its journey through the system, my case had been plucked out for "quality review." I was to learn that this is an unpublished in-house program in which a small percentage of cases on their way to issue are randomly selected out and reexamined by a special cadre of "super" examiners. The purpose of course is to keep track of the quality of prosecution being provided by the working-level examining corps.

There was thus nothing to do but sit tight and wait for the process to run its course. While prosecution could have been reopened, my case ultimately cleared quality review without problem, being forwarded on to the issue branch in May.

May 19, 1978: received official notice of allowance, along with a bill for the issue fee: a hundred twelve dollars.

July 5, 1978: received notice of my patent number and issue date. The total elapsed time from the day I filed turned out to be just under 1½ years. This notice also showed that the title of my invention had been changed from "Chamber Indicator" to "Gun Chamber Indicator" and its classification corrected to 42-1D.

The final question of course is what became of my patent. To date, I must admit, very little. In August 1978, I hadn't yet acquired all the good advice that I gave in the last issue about marketing inventions. Instead of making a working model and trying to demonstrate it in person, I instead simply forwarded copies of my patent by letter to several firearms companies, naively hoping that it might sell itself. As might be expected, their engineering departments didn't turn cartwheels over my invention. But the patent doesn't expire until 1995, so who knows?

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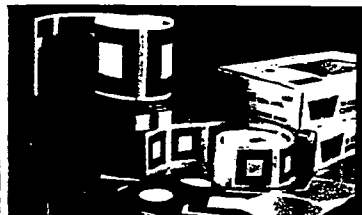
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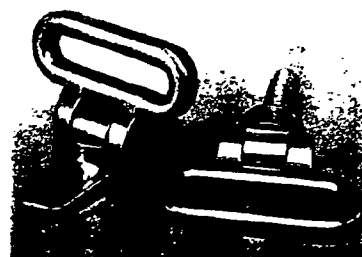
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