



APR 2007

DIGITAL ARCHIVE
EDITION

PRECISION ARMS WORKSHOP

AND THE AMERICAN GUNSMITH ARCHIVE

A TECHNICAL JOURNAL OF CRAFT, REPAIR & RESTORATION

041

ARCHIVE ISSUE NUMBER

INSIDE THE ARCHIVE

WORKING THE NEWER MARLIN LEVER-ACTIONS

NSSF: GIULIANI NO FRIEND TO GUN OWNERS • PROFILING THE H&R 1871 PARDNER PUMP SHOTGUN • TROUBLESHOOT...

ORIGINAL METHODS. MODERN ACCESS.

ARCHIVE EDITION 041

DIGITAL ARCHIVE EDITION

Preserved for the bench.

This edition presents the original American Gunsmith editorial work in a modern, searchable layout while preserving its issue, author, and source-page history.

ABOUT THIS EDITION

The article text comes from the original issue and has been reflowed for legibility. Obsolete subscription, ordering, association-service, and house-advertising pages are not reproduced.

Original article images appear only where permission has been confirmed. All other image positions remain visibly reserved so approved art can be restored without rebuilding the issue.

Report corrections or rights information to editor@gunsmithmag.com.



AMERICAN GUNSMITH

DIGITAL ARCHIVE EDITION • APRIL 2007

ISSUE RECORD

ORIGINAL DATE	April 2007
VOLUME	Archive volume not stated
ISSUE NUMBER	04
SOURCE ID	ag-1f1d022b751ac3bb4c1c012b

DIGITAL EDITION

PUBLICATION	American Gunsmith
EDITION	Digital Archive Edition
ARCHIVE STEWARD	Innovation Network LLC
CONTACT	editor@gunsmithmag.com

Editorial fidelity. Article titles, author attribution, issue relationships, source-page references, and article text remain bound to the archive corpus. Layout, covers, navigation, and conversion notes are newly produced for this edition. Historical statements remain part of the original editorial record.

IN THIS ISSUE

Contents

A complete guide to the searchable editorial work preserved from April 2007.

2 NSSF: Giuliani No Friend to Gun Owners

AMERICAN GUNSMITH EDITORS • ORIGINAL PAGES 2

3 Profiling the H&R 1871 Pardner Pump Shotgun

CHICK BLOOD • ORIGINAL PAGES 3-5

6 Troubleshooting Ejection Failures on the Remington 1100

DENNIS A. WOOD • ORIGINAL PAGES 6-8

9 The Basics of Double-Gun Lockup

DAVE NORIN • ORIGINAL PAGES 9-13

14 The Changing World Of Gunsmithing

ARTHUR J. HUNT • ORIGINAL PAGES 14-15

16 Buttplate Restoration with Epoxy

NORMAN E. JOHNSON • ORIGINAL PAGES 16-17

18 Working the Newer Marlin Lever-Actions

DAVID R. CHICOINE • ORIGINAL PAGES 18-21

22 Reader Forum

AMERICAN GUNSMITH EDITORS • ORIGINAL PAGES 22-24

FROM THE ARCHIVE

NSSF: Giuliani No Friend to Gun Owners

BY AMERICAN GUNSMITH EDITORS APRIL 2007

ORIGINAL PP. 2

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1195-P02-F01. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1195-P02-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1195-P02-F02. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1195-P02-F02

With all the hats being thrown into the ring for the upcoming presidential election, it's important for those of us in the firearms industry to know where the candidates stand on "our issue." That issue prompted Lawrence G. Keane, NSSF senior vice president and general counsel, to issue the following statement on the candidacy of former New York City Mayor Rudolph Giuliani: "In response to...

Giuliani's filing of a statement of candidacy indicating that he would enter the 2008 presidential race as a Republican, the National Shooting Sports Foundation (NSSF) reminds America's sportsmen and gun-enthusiasts of the former mayor's record of hostility toward firearms and gun owners. Recent remarks indicate the mayor is attempting to camouflage his record on guns, Keane said.

In June of 2000, then-Mayor Giuliani became the lone Republican mayor to sue members of the firearms industry as part of

a wave of lawsuits that began in the late 1990s by major cities like Boston, Chicago, Los Angeles, Philadelphia, and San Francisco that sought to hold firearms manufacturers responsible for the criminal misuse of firearms. The Giuliani lawsuit is still pending and is still being aggressively pursued by current New York Mayor Michael Bloomberg.

Moreover, Giuliani strongly opposed legislation blocking lawsuits like the one he filed against members of the firearms industry. In 2005, President Bush signed legislation into law that barred such lawsuits after Congress, by a broad bipartisan margin, passed the bill.

During the debate in Congress, the Giuliani lawsuit was specifically referred to as an example of the kind of "junk lawsuit" the law is intended to stop. "Giuliani's lawsuit may have gained him praise in Gotham, but will surely handicap him in the rest of the country," predicted Keane. More recently Giuliani's campaign has flipped-flopped on

the question of his longstanding support for restoring the Clinton-era ban on some semi-automatic rifles based on cosmetic appearance.

According to The New York Post, Giuliani's political operative in New Hampshire, Wayne Semprini, "has been telling voters that the...exmayor...won't support federal assault-weapons bans, as he has in the past." All the while, Anthony Carbonetti, Giuliani's top advisor, has been telling New Yorkers that "the mayor's position on this [the assaultweapons ban] has not changed." Commenting on this equivocation, Keane said: "You can't pretend to be a supporter of gun-owners in New Hampshire when you tried to sue the firearms industry out of existence in New York. "Well put, Mr.

Keane," is what I say.

SHOTGUNS

Profiling the H&R 1871 Pardner Pump Shotgun

Here's the lowdown on disassembly and reassembly of this 2005 entry into the economy scattergun market.

BY CHICK BLOOD APRIL 2007

ORIGINAL PP. 3-5

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1196-P03-F01. Know the rights holder? Please ask them to contact us.
AG-BB4C1C012B-A1196-P03-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1196-P03-F02. Know the rights holder? Please ask them to contact us.
AG-BB4C1C012B-A1196-P03-F02

Although I may come under friendly fire from the H&R Collector's Association, as close as I can figure it, the first Pardner shotgun came out in 1987. It was a break-open single-shot, and it was strong and built to last. I've worked on a couple of these single-shots in the last year or two; both required only minor fixes. According to some old timers, the latest incarnation of the historic, often-acquired and reorganized company, H&R 1871 has never produced a really strong pump shotgun. But they do now.

The new pump is strong enough to retain "Pardner" as its first name. It's produced offshore, but whoever got the contract was certainly up to the task. As a result, the Pardner Pump isn't overly complex, shows very good to excellent machining, and has a wood-to-metal fit that's better than you'd expect to find on a shotgun so reasonably priced. Moreover, it has a nice, slim receiver to greet the shooter when the gun is brought to point.

The 12-gauge Pardner has been out for a couple of years now and enjoys a zero return-to-factory record. The 20-gauge version under discussion here is the newest offering. Mechanically, the construction of the 20-gauge differs only slightly from the 12. However, one of the differences is significant, and involves retention of the ejector in the receiver. Field Stripping Don't assume the gun is empty.

Cycle it to be sure there are no rounds in the magazine, check the chamber, leave the hammer cocked, and place the safety on. Next, unscrew the magazine cap (#18) and set it aside. The magazine-spring retainer (#14) will pop up above the tube but will not come completely out for reasons that I'll explain later. Now pull the barrel free of the receiver. Drift out the front and rear triggerguard pins (#7 and 8). Push the trigger-plate assembly (#28) forward, tilt it down at its rear, and remove it.

Press the bolt release. Move the bolt toward the muzzle with the forend until half the bolt is visible in the ejection port. Turn the gun on its side or upside down whichever makes it easier for you to reach into the receiver with a small, dull tool and fully depress the front end of the left latch (#6). Hold the latch down and move the forend to the front until the actionbar assembly (#15) and bolt (#19) are withdrawn from the receiver. The slide assembly (#20) will probably drop from the bolt body at this point.

Have a padded place for it to land on your bench. Now is as good a time as any to mention why the magazine-spring retainer didn't take off. It has two channels, one on each side, in which The 20-gauge, shown here field stripped, is brand new. Mechanically, it differs only slightly from the 12-gauge version.

PROFILING THE H&R 1871 PARDNER PUMP SHOTGUN CONTINUED

ORIGINAL PAGE 4

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1196-P04-F01. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1196-P04-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1196-P04-F02. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1196-P04-F02

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1196-P04-F03. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1196-P04-F03

An arbor press would be ideal for removing it, but removal can be accomplished with less sophisticated tools. fit two detents located at the end of the magazine tube (#10). When the retainer is installed, the channels and detents are lined up, and the retainer is depressed against the magazine spring (#12) to a position below the level of the detents, then turned 90 degrees. When it's released, the detents prevent the retainer from exiting the tube.

When and if you must remove the retainer, depress it, align channels with the detents, turn it 90 degrees, and allow it to come out slowly. Lose control at this point and the spring along with the plug (#13) will make a swift pass at your nose. Detailed Disassembly Sometimes, the action bars on a pump gun get bent up or burred. This makes the action feel rough, gritty, and/or slow. The Pardner's bars are rigidly brazed to the action assembly (#15) so they can't be detached.

You'll still be able to smooth up any minor damage without taking off the forend. If the bars are severely damaged, a replacement assembly should be installed, and for that the forend has to come off. This requires the un-

screwing of the very, very tightly installed forend nut (#17). A Menck #3 wrench (from Brownells) will work for this, but be careful you don't split the forend when going after the nut. Tackle the bolt next. A small tool is inserted between the extractor (#27) and its plunger (#25).

The plunger is pushed rearward, and the extractor pivoted out. Lest I forget, there's a pretty strong little spring (#26) immediately behind the plunger. You wouldn't want to spend an hour or two hunting for those two little parts, so watch out when you remove the extractor. The large pin at the rear of the Pardner's bolt is the firing-pin retainer (#24). It's not only knurled at the bottom end, it's a steel-to-steel fit in there, and it's so tight an arbor press could come in handy.

I managed to dislodge it with an 8-ounce hammer, a drift punch of the correct diameter, and a nylon bench block. Drive the pin from the top, and only enough to release the firing pin (#22) and its spring (#23). These both are taken out to the rear, at which time the locking block (#20) falls from the bolt. The inside of the receiver is close to naked

now, but not quite; it still contains the shell latches. They're both staked in their receiver slots. There's also the ejector spring (#9).

In the 20-gauge model, the spring indexes into the back of the receiver and is secured in place with a hex-head screw/no problem there in the unlikely event an ejector breaks. But a large problem could rear its unpleasant head with the 12-gauge model, where the ejector is riveted in. Sure it's possible to drill out the old stud and rivet in a fresh ejector spring if you're set up for it tooling-wise.

Included in the necessary tooling are bluing tanks, which you'll almost certainly need to refinish the receiver after the drilling and riveting are polished off. (I understand that the factory has a small and dexterous staff who can perform quick turnarounds on replacing broken 12-gauge Pardner Pump ejectors. But, so far, they've had very little work to do.) What you're left with is the entire trigger assembly. Unfortunately, there is no schematic of it available from the factory. But don't fret.

The Pardner trigger assembly (or firing mechanism) is not a reinvention of the wheel, safety pin, paper clip, or mouse trap. Instead, H&R's engineers and "

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1196-P05-F01. Know the rights holder? Please ask them to contact us.
AG-BB4C1C012B-A1196-P05-F01

H&R 1871 Pardner Pump Shotgun (Specifications subject to change without notice) 1 Barrel Assembly** 2 Sight Bead 3 Choke 4 Receiver & Magazine Tube Assembly* 5 Right Shell Latch 6 Left Shell Latch 7 Rear Trigger Guard Pin 8 Front Trigger Guard Pin 9 Ejector Spring* designers took an “If it ain’t broke, don’t fix it” approach to producing a reliable trigger assembly.

They went to school on the trigger groups of other successful pump guns that have performed flawlessly for decades and they created a clone of the one they judged to be the most successful.

I’ll call that gun “Model X.” Although the components of the trigger assemblies in Model X and the Pardner Pump are not interchangeable, they can be dis- 10 Carrier** 11 Magazine Follower 12 Magazine Spring 13 Magazine Plug 14 Magazine Spring Retainer 15 Action Bar Assembly 16 Forend** 17 Forend Tube Nut 18 Magazine Cap 19 Breech Bolt 20 Locking Block** 21 Slide Assembly 22 Firing Pin** 23 Firing Pin Spring 24 Firing Pin Retaining Pin assembled and reassembled in the same way.

Instructions for working with the Model X’s trigger appear in the NRA Guide to Assembly for Shoulder Arms, in Gun Digest’s Book of Disassembly/Reassembly for Shotguns and complete schematics for it can be readily found. For the record, finding the “Model X” trigger assembly is not exactly like looking for the proverbial needle in a haystack.

I studied the books and 25 Extractor Plunger 26 Extractor Spring 27 Extractor** 28 Trigger Plate Parts Assembly 29 Stock Bearing Plate 30 Stock Assembly 31 Stock Bolt 32 Stock Bolt Washer 33 Recoil Pad** 34 Recoil Pad Screw 35 Recoil Pad Screw Plug 36 Receiver Stud *Restricted availability, send to qualified gunsmith only. **Factory installation only. drawings mentioned, made comparisons between the Pardner’s trigger assembly and those of a few other pump guns and proceeded to disassemble it with no trouble at all.

I have no doubt that you can do what I did equally well. But if you don’t feel confident with your decision on the trigger system, call me during “Hot Line” hours (see page 23) or send mean email and I’ll answer any concerns you might have. I

PEOPLE & COMPANIES

Troubleshooting Ejection Failures on the Remington 1100

This simple guide to problems that can cause failures to eject and extract will help to keep this popular shotgun going strong.

BY DENNIS A. WOOD APRIL 2007

ORIGINAL PP. 6-8

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1197-P06-F01. Know the rights holder? Please ask them to contact us.
AG-BB4C1C012B-A1197-P06-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1197-P06-F02. Know the rights holder? Please ask them to contact us.
AG-BB4C1C012B-A1197-P06-F02

Introduced in 1963, the Remington Model 1100 shotgun has been around for over 40 years now. Variations include a sporter for field shooting, a Magnum version for ducks and geese, as well as a skeet and trap model for those who enjoy breaking clay targets. In all, there have been well over 3,500,000 Model 1100s produced over this period of time so you are bound to see one (or more) come across your bench.

In this article, I'll cover some of the common problems that result in ejection failures along with a few of the possible glitches that aren't seen very often. And, of course, I'll examine the cures that will help you get this shotgun back in service as quickly and efficiently as possible. Takedown As always, before you begin disassembly, make sure you're dealing with an empty firearm by pulling the bolt handle back until it locks in the open position.

Stick a finger into the magazine tube to ensure there's nothing in there that could cause a loud noise. Because we'll be dealing

with springs, make sure you have a pair of safety glasses in position on your face. Takedown for the 1100 shotgun is quite straightforward and very simple. Unscrew the forend cap and slide the forearm off the magazine tube. The barrel will then come out of the receiver. Peer into the back end of the ring that hangs from the bottom of the barrel and fits over the magazine tube. Figure 1.

Gas Orifice Sizes Remington Model 1100 12 Gauge Length/Model Orifice Size Holes 34" Full Trap .079/No. 47 2 30", 28", 26", 22" .079/No. 47 2 26" Skeet .086/No. 44 2 26" Compd .086t No. 44 2 30" Magnum .064/No. 52 1 34" Duck/Goose .073t No. 49 1 You'll see a small hole or two drilled through and into the interior of the barrel. This hole(s) bleeds gas from the fired shell into the gas system to operate the action.

It's rare for this hole to get plugged up completely, as Remington designed the gas hole to self-clean as the gun is fired. Carbon can build up in this area, nonetheless, so a cleaning with a "Ream-

Klean" bristle-type pipe cleaner dipped in solvent should remove any carbon buildup that may be present. If more drastic measures are called for, refer to the table in Figure 1, which will give you the size of the gas hole you're dealing with.

Some folks will recommend using a number drill of the appropriate size to clean any stubborn carbon away from the walls of this hole. Fourand six-fluted reamers are also available in all number sizes. I prefer to use these when removing stubborn carbon, because the reamers have more guiding edges that will help to ensure that the reamer goes in straight as it's twirled between the fingers.

Look into the chamber to see if there is any rust or pitting in this area that could grab a spent shell head long enough to retard ejection. If rust is

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1197-P07-F01. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1197-P07-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1197-P07-F02. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1197-P07-F02

It's best to replace the aluminum part with a steel one. present, it can be removed with #0000 steel wool wrapped around a wood dowel spun in a hand drill. There are two rings on the outside of the magazine tube, the piston and piston seal. These are retained toward the front of the receiver by an O-ring (barrel seal). These rings will now slide off the front of the mag tube. Inspect the O-ring for cracks or brittleness and replace it if it's suspect.

The piston and piston seal will last along time, but if they show any indications of rust or pitting on the opposing angled faces, replacement is in order. When reassembling these two parts over the magazine tube, make sure that the slits in each part are 180 degrees opposed to each other. If gas is allowed to blow through the slits when lined up, some of the gas needed to operate the shotgun correctly could be lost.

Receiver Disassembly Push out the two pins that retain the trigger group in the receiver and remove the group. The bolt handle is removed by means of a strong tug on the bolt handle pulling it out of the bolt. Reach into the right front of the receiver through the cutout for the trigger group and depress the front portion of the feed latch. (Pushing it toward the inside receiver face.) The action bars and action bar sleeve will now slide out the front of the receiver taking the bolt with them.

Inspect the extractor for any visible signs of chipping on the front (hook) end of the extractor. If it's chipped, the extractor should be replaced. Push the extractor outward to get a feeling for any dragging of the extractor plunger. If the movement feels gritty, the extractor will need to be removed along with the plunger and spring. A thorough cleaning of the parts and the area where they reside should smooth things out, and a few drops of Break-Free CLP on the parts before reassembly will keep them lubricated.

The link rides along rails machined in the receiver, and as the bolt travels rearward, it pushes the link backward against tension from the action spring. Use a pair of needle-nose pliers to pinch the rear legs of the link together and then push the link forward. Turn the link either right or left and it can then be removed from the receiver. Carefully feel along the rails that the link rides on for any burrs or sharp edges that might be present.

A cotton swab rubbed along these rails will find any sharp edges by leaving cotton fibers clinging to the burrs. Burrs can be removed by carefully sanding them smooth with 600-grit emery paper backed by a small hardwood block. Don't overdo the sanding; just remove the burrs until the area feels smooth. The link is a stamped part and quite often there are burrs along the edges of the link where it rides along the rails.

These burrs can be removed with a fine-cut needle file and then polished with a felt bob or 600-grit emery paper on the face of the link that rides on the receiver rails. **Action-Spring Removal** To get at the action spring, the follower, and the plug, the stock will need to be removed. Remove the recoil pad or butt-plate which will expose the action spring tube nut. The wrench I use for this part of the takedown was made over 40 years ago and does the job without risk of damaging the nut slot or stock.

There are wrenches available commercially to do this job, and I highly recommend them over a screwdriver-blade-type tool. These wrenches fit over the end of the nut and guide a correctly fitting blade into the slot, providing plenty of strength to remove the nut and reinstall it. Once the action-spring tube nut is removed, the buttstock can be removed from the tube. Push out the pin going through the action-spring tube and the action-spring plug while holding a cupped palm over the rear end of the tube.

Catch the spring as it comes backward and relax the tension on the spring until you can pull it out of the tube. The inside of the action tube is cleaned with a .410 gauge bore brush wrapped with #0000 steel wool dipped in solvent. The action-spring follower has a tapered hole in the front end and a ring machined on the inside of the tapered hole that retains the rear end of the link. The followers (part #15171) that I have in stock are made of steel,

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1197-P08-F01. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1197-P08-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1197-P08-F02. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1197-P08-F02

22 Short round. Once pressed into place, it will ensure correct barrel alignment. but apparently Remington made these out of aluminum at some point in time. The one shown in the photo here was made from aluminum and removed from a Model 1100 in 12gauge Magnum. For reasons unknown, the coned end of this aluminum follower flared outward and was dragging on the inside walls of the actionspring tube with enough pressure to impede the ejection process.

My suggestion is to replace any aluminum action-spring follower you run across with the steel type to avoid this possible problem. Measure the length of the action spring. These springs will develop a "set" over time from the compressing action endured during the firing cycle. Anew action spring measures around 15-1/4 inches when new, so if the spring you removed measures, say 14 inches or less, it's developed too much set and should be replaced with anew spring.

Barrel Guide On the left, upper inside face of the receiver is a little round button. This button is the barrel guide that clocks the barrel for the correct position in the receiver. The barrel guide is spot welded in place during manufacturing of the receiver and is not available as a replacement part. Looking at the example depicted in the photo here, you can see that the barrel guide has broken off and the owner is unaware of how and when this happened.

Without the barrel guide in place, the barrel can become rotated such that the extractor cutout in the barrel will bind the extractor in the bolt and cause enough pressure to prevent complete cycling of the action. The owner and I discussed a couple of approaches to the repair. Should the firearm be sent back to the factory for what might be a costly repair? Or could he put up with a repair that might have a minor effect on the cosmetic appearance of the shotgun but would be much less costly?

The second option was the owner's choice. The receiver was set up in my milling-machine vise with the shallow hole (where the barrel-alignment button was) centered under the drill chuck. A #36 (.1065 inch) drill was used to drill a hole through the receiver and then the hole was reamed with a #33 (.113 inch) reamer to produce a smooth, round hole. Anew barrelalignment guide was then turned in the lathe with ahead diameter of .162 inch and a length of .060 inch.

The shank of the alignment button was then turned to a diameter of .114 inch, which is .001-inch larger than the reamed hole with an edge chamfer on the end that would be pressed into the .113-inch reamed hole. The .162-inchdiameter end was also chamfered to break the sharp edge.

A dry fit of the button was then done to make sure that it slipped into the guide slot with enough clearance on the diameter and

front end so that it would slide freely in the barrel slot and be just below the outside diameter of the barrel in this area. The shank end of the replacement barrel guide was then coated with Loctite #277 (permanent) and aligned over the hole reamed in the receiver verifying that it will go in straight. The alignment button was then pressed into place with a small arbor press.

The pressing-in process can also be done in a drill press with a steel spud in the drill chuck. Once the new alignment button was in place, it was cold-blued to match the internal receiver finish. The barrel-alignment button does just one thing: It keeps the barrel from rotating out of place in the receiver. There is no pressure on this part and nothing moves against it during the firing cycle. Its only purpose is to align the barrel correctly.

With this repair there will be a visible plug, .114 inch in diameter, on the outside of the receiver on the left side. If it ever breaks off again, however, the repair will be easier. **Conclusions** The cause of ejection failures can be analyzed with a few simple procedures and an understanding of whatever is happening that's not normal.

Any alteration to the cosmetic appearance of a firearm will require the approval of the owner, of course, and needless to say, no alterations should ever be done to any firearm that will compromise its safety. I

RIFLES

The Basics of Double-Gun Lockup

A thorough understanding of the factors that control locking, bolting, and tightness is required before attempting to repair a "loose" double.

BY DAVE NORIN APRIL 2007

ORIGINAL PP. 9-13

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1198-P09-F01. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1198-P09-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1198-P09-F02. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1198-P09-F02

In several Middle-European countries, the favorite hunting gun is a "drilling."

A drilling has two shotgun barrels mounted side by side with a rifle barrel fixed directly beneath them. All three barrels share the same receiver and stock. These exotics probably don't enter your shop very often, but the information that follows can serve you well when you encounter a double shotgun that has "gone loose." Case in point: A good client recently brought a drilling into my shop for major work.

I have known the gun's owner, John, for over 30 years. This was originally his father's gun, and John has been using it annually for over 40 years. For most of those years, I've checked this gun out at the end of the season, and we've discussed upgrading it for the last five or six years. This year, it's getting a full rebuild, and I thought I would share some of the procedures with you. The Basics There seems to be a common belief among double-gun enthusiasts that if a gun is loose, it has a worn hook.

The common remedy is to make anew hinge pin or add metal to the barrel hook, and then fit the breech back onto face.

Doing this will tighten up the gun, of course, but this oversimplified approach doesn't take into account the other locking, bolting, and tightness aspects of the gun. In many cases.

It's just "half a fix." There are several elements that must be in proper relationship: 1) The hook and hinge pin must mate and hold the breechface as tight as possible against the standing breech. 2) The locking bolt must engage and mate with the barrels' underlugs and hold the barrels down securely, and yet still have a remaining bit of forward movement to compensate for wear. 3) The forend iron plays a significant role by holding everything together.

The gunsmith must understand that the barrel hook, hinge pin, and iron all three form a joint on which the barrels hinge and rotate. All three of these elements must be in proper relationship for the gun to have along life of correct function. If you repair just one element, the life of the repair may be rather short. The Job at Hand The work order for this drilling went like this: Make and fit anew hinge pin, including smoking the breech back onto face. Half-sole the locking bolt and refit it.

Make anew (Greenerstyle) cross bolt. Weld and refit the recess slot on the forend iron for a tighter fit. When rebuilt and tested, it would then be stocked and metal finished. The work began with the use of stones to clean and smooth the window in the receiver in which the locking bolt moves. It is the bottom of the locking bolt that engages and holds down the barrels. Inspection determined that the locking surfaces need to be moved down a full .003 inch.

Milling a recess on the top surface of the locking bolt allows a place on which to attach (with soft solder) a thin piece of 01 tool steel (see Figure 1 on the next page). Once this spliced piece is attached, the openings for the lugs can be milled and stoned back to the remaining original lines. Surface grinding is used to bring the part correctly to a point close to the needed .003 inch.

Refitting the part to the attached receiver and barrel assembly is done using hand stones on the spliced new steel, leaving the original locking bevels on the bolt alone. The point is to retain A section of the locking bolt is visible in the photo here.

THE BASICS OF DOUBLE-GUN LOCKUP CONTINUED

ORIGINAL PAGE 10



Figure 1. the original locking surfaces, yet move them down. At this point, I bring the fitting to about 98-percent completion. I make all fitting adjustments to the altered locking bolt, not to the barrel-lug recesses. We want smooth and clean locking and un-locking, but don't bring it to completion just yet. Experience is of some importance here regarding the value of the repaired part. Hardness is something to consider.

Before you work on the part, check its hardness, either with the old gunmaker's "file test" or with a Rockwell tester. Locking bolts are generally not particularly hard; files usually cut them without much effort. A Rockwell-C in the low 30s should do just fine. If this hardness cannot be maintained, the face area, will hold fine and should not affect the original hardness of the part as long as you keep the temps low. A half-sole repair is an acceptable way to repair a locking bolt.

The other alternative is to mill out anew part. The raw 01 steel has sufficient toughness to function well for another generation. This

particular drilling had a hinge pin that was relatively easy to remove. Fully assembled, the breech would close and lock on a .003-inch feeler gauge at all locations around the breech area. A thicker gauge would go in at different locations and, at some spots, a .004-inch gauge would not go in.

An additional .002 would be needed to allow enough material to be removed from the breech for a surface as flat and level as possible. So 0005 inch less than the diameter of anew hinge pin which will be pressed in. This ensures the barrel lug will be cut to the same dimension and will mate well with the pin. correct thing to do is to make anew locking bolt from known steel and follow the guidelines for hardening and drawing.

Soft soldering the splice on, as long as there is sufficient surthe target amount to move the barrels back is .005 inch. We can't always have everything we want. I am sure you are aware that the standing breech on double guns is not 90 degrees. Actually, 88-1/2 de-

grees is about average for most guns. This is to allow the needed room for the barrels' bottom edge to clear, as it swings open in an arc.

Because of this, and the fact that the wear on the breech is a bit uneven and the standing breech may not be perfectly flat, it's unrealistic to expect to get a full 100-percent even contact on the barrel breech. One-hundred percent is possible on the bottom half of the breech, but 98-percent full, even contact on the top half is doing well. Moving the barrels back a full .005 inch will give usa great fit. That, in conjunction with the other work, will give this gun another full generation of use.

To get the .005 inch we need, the new hinge pin must be made .010inch oversize. Drill rod works just fine for this, as long as its hardness is comparable to the hardness of the barrel-lug hook. This does need to be precision work, though. Working to within .0005 inch should be strived for here. As I said before, we can't

THE BASICS OF DOUBLE-GUN LOCKUP CONTINUED

ORIGINAL PAGE 11

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1198-P11-F01. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1198-P11-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1198-P11-F02. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1198-P11-F02

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1198-P11-F03. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1198-P11-F03

have everything we want, so .010 inch over is our target size, but we must consider what hand reamer sizes are available that are close to what we need, and that will determine what we'll use for actual dimensions.

The procedure here is simple: 1) Make the new hinge pin to exactly the size you need. 2) Use a series of hand reamers to open the hinge-pin hole to exactly .0005 inch less than that, and then press it in. 3) Smoke (fit) the .010 inch larger in diameter than the old pin. breech back onto face, using a smooth cut file and stones. The locking bolt and forend should both be in place during this operation. In the photo, I made a mistake; I cleaned the oil off for the photo and forgot to reattach the iron.

That's the only mistake I've made this year. Have the iron on for the reaming. This job was fitted to 98percent completion at this time. There remains three more things to do on this job. The forend iron plays a big role

in holding it all together, and a tight fit against its lug is important. Since the gun will be casehardened after stocking, this recess is TIG welded and dressed. You remember that we took each of the jobs to 98-percent completion?

Well, now with each part of the job at 98 percent, we bring the whole job to 100-percent completion. Why put the gun on face when you have a loose locking bolt? The final job should open and close smoothly, and when locked up, it should be tight. The top lever should be just right of center. It should work like it's supposed to; you shouldn't have to tell the client: "That will wear in." The final part to complete is the Greener cross bolt.

The gun is assembled and locked, the hole is reamed, and then anew bolt is turned, fitted, and engraved. Since it will be casehardened, low-carbon rod is used. The parts of a double gun or drilling are kind of like the cars of a freight train. They each pull or interplay with

each other, and you can't change the value on one part without changing the value of another part.

Conclusions In the final analysis you might ask: "Why go to all this trouble?" John's father used this gun and passed it down to him, and now John wants it rebuilt and refinished so he can pass it down to his grandson'in as good a condition as it was in when he received it. In other words, he wants it to be ready for another generation of use. The gun is already about 80 years old, and well used, but well taken care of'countless heads of game and birds have fallen to it.

If I do my job well, it should be good for another 80 years before needing another rebuild, which would certainly be possible. Try doing that with the throwaway guns they're making today! And that's why he going to all this trouble. I Reprinted with permission from the author and the American Custom Gunmakers Guild, Inc.

RIFLES

The Changing World Of Gunsmithing

Surplus military weapons from World War II helped to start the custom rifle business. But the industry has been changing ever since, and the successful gunsmith has had to and will have to change with it.

BY ARTHUR J. HUNT APRIL 2007

ORIGINAL PP. 14-15

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1199-P14-F01. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1199-P14-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1199-P14-F02. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1199-P14-F02

The heyday of gunsmithing was probably from the end of World War II to the beginning of the Vietnam era. During this period there were thousands upon thousands of Mauser, Enfield, and Arisaka rifles that were remodeled into sporters. The order of the day called for restocking and rebarreling, along with new sights, bolt alterations, and reshaping of trigger guards. As a result, thousands of gunsmiths (?) sprang up to do these jobs.

You could get a Bishop or Herter stock and others I can't remember for a few dollars, and thus was started an industry of small-time gunsmiths who remodeled these rifles. Of course, for every good job of restocking and sporterizing there were hundred of awful jobs, but no one seemed to care. The guns were cheap or even free if they'd been brought back as war trophies. Probably more deer were killed with these "custom rifles" than with the old Winchester 94, if such a thing is possible.

I made a bunch of them and I've often wondered what happened to them, for you rarely see any of these old rifles anymore. The boltaction was king back then as it still is today for hunting rifles. I began my career as a gunsmith in 1946 rebuilding these rifles. I teamed up with a friend of mine who was very skilled at finishing semi-inletted stocks and checkering. We turned out some respectable Mausers and we rechambered hundreds of 7.7 Japs for the .30-06.

Why anyone would want a Jap, I never could figure out, but many were used in their original caliber. In those days, we could make a profit by building and selling a "custom" rifle with micrometer rears and ramp fronts for \$135. Although most of these guns have disappeared, there are still a few amateurs turning surplus British SMLEs or Pattern 14 or 95 and 98 Mausers into inexpensive hunting rifles. This business has all but disappeared from the gunsmith shop.

Oh, we still get a few Springfields and the occasional Enfield, but not many. One of the reasons for the decline in this kind of business is that fewer people want custom rifles these days and the average guy doesn't want or need to spend the money that a custom job costs.

Today, the gun makers are doing a better job of listening to the shooting and hunting customer, and he can usually find a quality rifle of the design he wants made by somebody and at a figure substantially The easy availability and low prices of surplus World War II-era rifles helped to launch the custom-rifle craze as well as the careers of many of America's gunsmiths. less than a custom rifle.

Nowadays the barreled actions by Ruger, Remington, Saco, or Mark Xis what the custom buyer is looking for and rightly so, because all of these actions and barrels are better than any run-of-the-mill military rifle from generations past. (Back in 1946,

THE CHANGING WORLD OF GUNSMITHING CONTINUED

ORIGINAL PAGE 15

we didn't know much about epoxy bedding and epoxies weren't widely available. Thank goodness that's not the case today.) I'm rather amused when I look at books such as the NRA Gunsmithing Guide and when I read articles on rebuilding bolt-action "custom" rifles when there just isn't that kind of business anymore. The death of the reworked military job began with the introduction of the semiand fullauto military rifle.

The gun makers brought out M1-carbine lookalikes and have improved their semi-auto rifles and shotguns, too. This introduction of new and better guns has appealed to our customers. The appeal of the semi-autos was due at least in part to the fact that Americans are in love with machinery. If you've been around long enough to witness the present trend away from the revolver and toward the semi-automatic pistol, you can't help but agree.

Along with this change in guns, the gunsmith has had to change, too; he couldn't afford not to. He's had to learn new mechanisms and how to treat their ills. If he didn't, he's had to go back to the factory or farm and try to get his old job back. War, of course, is a great creator of new and different types of weapons. Look back to the Revolutionary War. Then it was flintlocks; then percussion; then the trapdoor Springfield, the Krag, the '03 Springfield, the Garand, etc. etc.

I'll bet every one of these has been cut down and modified for hunting in some form or another. It's different today. The modern military rifles don't lend themselves to looking like a Griffen & Howe Sporter, and as I mentioned, customers for custom rifles want modern actions and super-accurate barrels. A deer hunter today wants his 7mm Magnum to shoot 3/4-inch groups from the bench—even if he can't hit an elephant in the ass at 50 yards offhand. There haven't been many surplus U.

S. rifles lately anyway, and the good old days of the DCM are apparently over. And while the romance of the fine custom rifle will always be with I us, the military-surplus actions are fewer and farther apart. So many of the gunsmiths of the post-World War II and Korea era have come and gone. What we have left are those gunsmiths who have stayed abreast of the changing world. We have to be able to service the various new guns that come on the market as well as those that have been on the market for years.

Thankfully, with millions of guns in this country, there will always be plenty of work for those who continue to learn and hone their skills'for anything and everything mechanical breaks sooner or later. Speaking of changes in the industry, right now there seems to be a veritable flood of aftermarket components for almost every semi-automatic pistol known to man.

(Does anyone know where I can get an add-on compensator for an Excam? Just fooling.) The market for smoothing up these pistols is huge.

The factories will never turn out a gun that can't be improved on by a competent gunsmith, but we have to stay alert to the changes and continue to learn what to do (and what not to do). Too bad there aren't more local seminars on these things. You realize, I'm sure, that one day the 1911s will dry up just as the old military rifles have, and we'll have to turn our talents to the newer actions that are being sold and used. The shotgun market will probably stay pretty much the same as long as they make shotguns.

We'll always be putting in chokes, replacing recoil pads, rebluing, and making stock modifications. But make no mistake about it, we'll still have to learn the new models as long as there are new models coming out. All in all, I see no black clouds on the gunsmith's horizon'except more foolish gun laws.

If you keep improving your skills and increasing your knowledge about the new guns, you'll always have someone coming into your shop with a worried look on his face and imploringly asking: "Can you fix this?" And your answer will always be: "You bet I can."

PEOPLE & COMPANIES

Buttplate Restoration with Epoxy

Sure, you can replace a broken buttplate with an aftermarket part. But when restoring someone's family heirloom, repairing the original part is often a better option.

BY NORMAN E. JOHNSON APRIL 2007

ORIGINAL PP. 16-17

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1200-P16-F01. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1200-P16-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1200-P16-F02. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1200-P16-F02

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1200-P16-F03. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1200-P16-F03

When two teenage boys brought me a much-used Remington Model 514 single-shot takedown rifle for restoration, I had to give some serious thought to the practicality of such a request. The action and barrel were badly rusted, the stock showed the ravages of hard use, and the front sight was missing entirely. The buttplate—which clearly bore the name “Remington” The Remington Model 514 was made

from 1948 to 1971. This particular rifle originally belonged to the boys’ grandfather, who had owned the gun as a youth.

The grandfather had passed away, and the restoration of the old rifle would be a surprise Christmas gift for the boys’ father. Under the circumstances, I felt compelled to take on the job, and I felt it was worth a little extra effort to preserve the original appearance of the old Remington. Performing the

Repair To repair the buttplate, I used Pro-Bed 2000 resin material sold by Score High Gunsmithing (9812-A Cochite SE, Albuquerque, NM 87123).

Many other epoxy-based glass bedding materials will work just as well, but the Pro-Bed 2000 has a black texture that closely matched the original buttplate. It also can be checked to closely

BUTTPLATE RESTORATION WITH EPOXY CONTINUED

ORIGINAL PAGE 17

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1200-P17-F01. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1200-P17-F01

Original caption: Right top: Pro-Bed epoxy is available in black or brown to match the color of a gunstock. In this case, the black material was a good match for the color of the buttplate. Right bottom: The soft epoxy can be worked into all the corners and edges with a pointed stick. match the buttplate. First, it's necessary to cleanup the edges of the damaged part. This is best done by following the checkering line, and leaving the surface square and clean.

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1200-P17-F02. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1200-P17-F02

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1200-P17-F03. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1200-P17-F03

I used a Dremel tool with a 1/8-inch bit to clean up the edges of the part and roughen the inner surfaces. This ensures a better bond of the epoxy material to the plastic buttplate. Having prepared the part, I used a thin piece of sheetmetal formed to the outer configuration of the buttplate. This form was held in position with small brads, tacked to a flat, wood surface. The stock screws were used to hold the buttplate precisely in position against the form strip.

Release agent was then applied to the wood surface and the inside of the metalform. This prevents adhesion of the epoxy material at these points. After the release agent set up, I mixed a sufficient amount of the epoxy material to fill the void. I placed some of the epoxy material on the underside of the buttplate before attaching it to the board,

then filled the form with epoxy, making sure it was pushed against the sides of the broken buttplate and against the form.

A pointed applicator helps to work the epoxy material into all the corners and edges and eliminate air bubbles. The checkering of the repaired area can be done either before or after the epoxy has set up completely. I did some experimenting on a test surface, and decided it was easier to work with the epoxy material when it was nearly cured, but still soft enough to tool easily with a piece of steel that was pointed to match the original checkering grooves. Absolute perfection here is not necessary.

All you really have to do is to replace the missing material, and produce a pattern that helps to disguise the repair. The part can be removed from the board and the form re-

moved after allowing ample time for the epoxy to set—usually 8 to 10 hours. If necessary, the side of the buttplate where the form was applied can be cleaned up with a flat file or fine sandpaper. As a final touch, I applied a light coat of stock finish to the repaired part to give it an even, low-gloss sheen.

Conclusion Preserving the collector's value of a gun such as this old Remington Model 514 sometimes requires a bit of ingenuity, particularly when parts have to be fabricated or rebuilt. And it's not always easy to charge the customer for what your time is really worth. But there's a great deal of satisfaction to be had in coming to the rescue of an old gun.

And then, of course, there's the added fulfillment that comes from knowing you've helped to maintain a family heirloom and helped to give a family a happy Christmas. I

HISTORY

Working the Newer Marlin Lever-Actions

Follow these simple steps to disassemble and reassemble the Marlin Model 336- Series rifles, as well as the Model 444 and the post-1972 Model 1895.

BY DAVID R. CHICOINE APRIL 2007

ORIGINAL PP. 18-21

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1201-P18-F01. Know the rights holder? Please ask them to contact us.
AG-BB4C1C012B-A1201-P18-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1201-P18-F02. Know the rights holder? Please ask them to contact us.
AG-BB4C1C012B-A1201-P18-F02

The glory days for Marlin were from the early 1880s up to about the turn of the century, a time when they manufactured an impressive line of high-quality lever-action rifles and carbines. Marlin's leveractions were also offered in a wide range of calibers and sizes. These ranged from large rifles to handle biggame calibers to medium-framed rifles in pistol calibers (such as the .44- 40 Winchester) down to small .22caliber rimfire versions.

The original Marlins were beautiful creations, at least as nicely crafted as those of their competition and, as a rule, the Marlins were much simpler. Those early models evolved into the more familiar modern versions of the classics, guns which we know today as the 336, the 444, and the 1895 models, built around the concepts originally introduced by John Marlin. Marlin rifles have been thought of by some shooters as "the other lever action." Indeed, they have long played second fiddle to Winchester's lever guns.

And while it's true that the modern Marlin Firearms Co. hasn't paid a lot of attention to highly polish blue finishes and fancy

wood, they have concentrated on making solid, dependable hunting rifles for longer than most of us can remember. These rifles use a robust and easy to understand action that makes for a dependable repeater that an owner can expect to last a lifetime (with, of course, the occasional help of a good gunsmith).

Moreover, modern Marlin lever-actions also provide a sound starting point for anyone who wants to build a great custom lever gun. The Marlin 336 series of rifles area continuation of (and an improvement to) the Model 36, which was introduced in 1936. In turn, the Model 36 had even earlier origins that can be traced back to the Model 1893.

The model designation 336 was used after an alteration was made to the Model 36 in 1948, when the bolt shape was changed to round, enabling the factory to build a stronger receiver around the bolt. The 336-Series rifles are primarily used for hunting and are chambered for cartridges like the .30-30, .32 Winchester Special, and .35

Remington, though over the years they have been chambered for the .44 Magnum, .356 and .375 Winchester, and .444 Marlin.

The larger Model 1895 in .45-70 caliber was "reintroduced" by Marlin 38-55 caliber. The cross-bolt safety, located at the rear of the action, is shown in the off position. Author photos. in 1972, only this time, the new Model 1895 was built on the stronger, round-bolt concept like the one used in the 336 action. Marlin has closely followed the trends in public interest, with an emphasis in recent years on the needs of the cowboy-action shooter.

A "cowboy" version of the 336 was introduced in 1999, offered in .30-30 or .38-55 Winchester calibers, along with a Cowboy Model 1895 chambered in .45-70. Takedown Instructions These instructions work with newmodel Marlin Models 336, 444, and the post-1972 Model 1895. The procedures in these instructions are also applicable to older Model 336, 444, and 1895 models, with the major exception being that these earlier rifles were not equipped with a hammerblock safety. 1. I mentioned above that the Marlin

WORKING THE NEWER MARLIN LEVER-ACTIONS

CONTINUED

ORIGINAL PAGE 19

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1201-P19-F01. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1201-P19-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1201-P19-F02. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1201-P19-F02

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1201-P19-F03. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1201-P19-F03

is a simple design, and if you're not already familiar with it, you're about to find out how true that statement is. Start by making sure the rifle is unloaded. Grasp the rifle around the wooden forearm and barrel with your left hand and take care to point the muzzle in a safe direction. With your right thumb, pull the Marlin's hammer (#36) back until you hear one click, and press the hammer-block safety to the "safe" position by pushing it in from left to right (as viewed from the rear).

Now, open the action by pulling all the way down on the finger lever (#16) with your right hand. This is the time to check and be absolutely certain there is not a cartridge in the barrel's chamber. Also, look through the bolt opening down into the action to make sure there is no cartridge lying in the carrier (#7) within the action. Note: If there is a cartridge in the carrier block, when you close the lever, the rifle will be loaded.

To safely unload a Marlin lever-action with a loaded magazine, keep the muzzle pointed in a safe direction and, keeping your finger away from the trigger, in the photo, a Model 1895

is held by an oak gun cradle made by Mountain Meadow Enterprises and available from Brownells. A device like this is an excellent investment for the professional and hobbyist alike.

It offers a simple, secure method for holding along gun while it is being worked on. operate the lever to the fully open and fully closed positions several times. This will expel the cartridges in the magazine. Repeat the operation until there are no more cartridges expelled from the action. 2. To remove the lever, the breechbolt, and buttstock, start by moving the finger lever so it is about halfway down, and unscrewing and removing the finger-lever screw (#20).

Pull down on the finger lever and remove it out the bottom of the receiver (#62). Move the breech bolt (#2) all the way to the rear and out of the receiver, then lift out the ejector (#14) from inside the opening the bolt just came from. After unscrewing and removing the tang screw (#67) from the upper receiver tang, the buttstock (#6) can be pulled

straight off to the rear. Reassembly tip: Take careful note of how the ejector fits into the frame for later assembly.

Be careful here; as you can see in the photo, the mag-tube plug is under spring tension. 3. Disassembling the receiver begins by lowering the hammer (#36) so that it's all the way forward. Use your thumb or a tool to push down on the top of the mainspring-adjusting plate (#39). Then, while carefully holding the spring and plate captive until the tension is released, slide the plate along with the mainspring (#38) out to the side of the action.

Unscrew and remove the hammer screw (#37) and depress the trigger-safety block (#74), hold the trigger (#68) to the rear, and then lift the hammer assembly (#36) up and out of the top of the receiver. Assembly tip: Make careful note of how the mainspring parts all fit together for later assembly. Next unscrew and remove the trigger-guard plate screw (#72) from the bottom-front of the trigger guard and the trigger-guard plate support screw

WORKING THE NEWER MARLIN LEVER-ACTIONS CONTINUED

ORIGINAL PAGE 20

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1201-P20-F01. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1201-P20-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1201-P20-F02. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1201-P20-F02

Marlin Models 336, 444, and 1895 Lever-Action Rifle (Specifications subject to change without notice) 1 Barrel 2 Breechbolt 3 Bullseye 4 Buttplate/Buttpad 5 Buttplate Screw (2) 6 Buttstock 7 Carrier 8 Carrier Rocker 9 Carrier Rocker Pin 10 Carrier Rocker Spring 11 Carrier Screw 12 Ejector 13 Ejector Spring 14 Ejector w/Spring 15 Extractor 16 Finger Lever 17 Finger Lever Plunger 18 Finger Lever Plunger Pin 19 Finger Lever Plunger Spring (#73) from the left side of the receiver.

The trigger-guard plate assembly (#70) can now be pulled down out of the bottom of the receiver.

After unscrewing and removing the carrier screw (#11) from the right side of the receiver, the carrier (#7) will be free, and it and the locking bolt (#47) can be removed out the bottom of the receiver. 20 Finger Lever Screw 21 Firing Pin, Front 22 Firing Pin, Rear 23 Firing Pin Retaining Pin (2) 24 Firing Pin Spring 25 Forearm 26 Forearm

Tip 27 Forearm Tip Tenon 28 Forearm Tip Tenon Screw (2) 29 Front Band 30 Front Band Screw 31 Front Sight 32 Front Sight Base 33 Front Sight Base Screw (2) 34 Front Sight Hood 35 Front Sight Insert 36 Hammer Unscrew and remove the loading-spring screw (#46) and the loading spring (#45) can be lifted out of the receiver.

Again, be sure to make careful note of the relationship of these parts for later re-assembly. 4.

When it comes to removing the forearm and magazine tube, you 37 Hammer Screw 38 Hammer Spring (mainspring) 39 Hammer Spring Adjusting Plate 40 Hammer Spur Assy. (41 & 42) 41 Hammer Spur Screw 42 Hammer Spur Wrench 43 Hammer Strut 44 Hammer Strut Pin 45 Loading Spring 46 Loading Spring Screw 47 Locking Bolt 48 Magazine Tube 49 Magazine Tube Follower 50 Magazine Tube Plug 51 Magazine Tube Plug Screw 52 Magazine Tube Spring 53 Magazine Tube

Stud 54 Pistol Grip Cap 55 Pistol Grip Cap Screw 56 Rear Band 57 Rear Band Screw 58 Rear Sight Assembly 59 Rear Sight Base 60 Rear Sight Elevator 61 Rear Sight Folding Leaf 62 Receiver 63 Safety Button Assembly 64 Scope Mnt.

Dummy Screw (4) 65 Sear 66 Swivel Stud, Rear 67 Tang Screw 68 Trigger 69 Trigger and Sear Pin 70 Trigger Guard Plate 71 Trigger Guard Plate Latch Pin 72 Trigger Guard Plate Screw 73 Trigger Guard Plate Support Screw 74 Trigger Safety Block 75 Trigger Safety Block Pin 76 Trigger Safety Block Spring *Part sent to qualified gunsmith only. **Part installed at factory only. ***Part may require final fitting. should be aware that Marlin has used different methods of securing the magazine and forearm over the years so you might run into some variances from the instructions below.

Fortunately, however, they're all pretty easy to figure out. On carbines you'll start by unscrewing and removing the magazine-

WORKING THE NEWER MARLIN LEVER-ACTIONS

CONTINUED

ORIGINAL PAGE 21

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1201-P21-F01. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1201-P21-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1201-P21-F02. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1201-P21-F02

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1201-P21-F03. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1201-P21-F03

Removing the carrier screw from the right side of the receiver will allow the carrier to fall out the bottom. tube plug screw (#51) out of the bottom-front of the magazine tube. The magazine-tube plug (#50), the magazine spring (#52), and the magazinetube follower (#49) can now be withdrawn from the front of the magazine tube (#48.) Unscrew and remove the front band screw (#30), then slide the front magazine band (#29) off the front.

Unscrew and remove the rear band As the finger lever is closed, it pushes the locking bolt up. That, in turn, pushes the rear firing pin back up into alignment with the front firing pin, allowing the gun to fire. screw (#57) and you can slide the forearm wood (#25) and the rear band (#56) forward on the barrel a little. You can now remove the magazine tube by pulling it forward. Then slide the rear band off the forearm wood and the barrel, and tilt the forearm down and remove it.

For rifles, you unscrew and remove the two forearm-tip tenon screws (#28) and move the forearm tip forward slightly. Holding your

thumb over the magazine tube plug, unscrew and remove the magazine-tube plug screw, and pull down on the front of the magazine tube. The tube cap (it's under spring tension, so hold on) will now come free. The cap can be removed out the front of the magazine tube, along with the magazine-tube spring and the magazine follower.

Pull the magazine tube and the forearm wood and forearm tip forward and off the rifle. The forearm tip and forearm will now slide forward off the tube. 5. As you disassemble the Mar- I lin's trigger-guard plate, make note (or take a photo) of the relative positions of these parts for ease of reassembly later. Using a pin punch and small hammer, drive out the trigger and sear pin (#69) and the trigger (#68) and sear (#65) can be removed from the trigger-guard plate.

Using the same procedure, drift out the trigger-safety block pin (#75), and the trigger-safety block (#74) and its spring (#76) can be lifted out the top. 6. To disassemble the breechbolt and finger lever, the extractor

(#25) is first removed from the breechbolt (#2) by carefully prying it out of its slot and to the side. A small screwdriver will work for this. Using a suitable pin punch and hammer, remove the rear firing-pin retaining pin (#23) by drifting it (from top to bottom) out of the bolt.

The rear firing pin (#22) and the firing-pin spring (#24) can now be removed. Remove the front firing pin (#21) by driving out the front firingpin retaining pin (#23). The firing pin will now slide out to the rear of the breechbolt. To disassemble the finger lever, the finger-lever plunger (#17) and its spring (#19) are removed by using a suitable pin punch and hammer to drift out the finger-lever plunger pin (#18.) Further disassembly of the action is not required for normal maintenance.

And reassembly, of course, is accomplished by simply reversing the order of the above procedures.

MAINTENANCE & REPAIR

Reader Forum

BY AMERICAN GUNSMITH EDITORS APRIL 2007

ORIGINAL PP. 22-24

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1202-P22-F01. Know the rights holder? Please ask them to contact us.

AG-BB4C1C012B-A1202-P22-F01

Mossberg Mag-Tube Removal I need to remove the magazine tube on a Mossberg 500 shotgun to replace the spring and follower. What's the best way to remove the tube and what, if any, special considerations should I be aware of when reinstalling it? Thanks in advance. Remove the barrel, bolt, action slide, and trigger group from the receiver. Plug the open end of the magazine tube with a Model 500 follower or a two-inch length of hardwood dowel that fits snugly (but not too tightly) within the tube.

Secure no more than the first inch of the tube between padded vise jaws. The follower or dowel will help prevent crushing. Cut a piece of hardwood to fit up into the receiver with about 5 or 6 inches extended out from the loading slot. Using the hardwood insert as a handle, you should be able to turn the receiver off the tube. (Note: The same insert is used to install a new tube.) Brownells used to offer a metal block that was a ringer for the factory magazine tool employed at the Mossberg Armorer's School.

They no longer offer it, and ours isn't for sale or rent. Nevertheless, the hardwood substitute works pretty well. Remington 550 Jam I'm currently working on a customer's Remington 550 semi-auto .22 LR rifle (First

model, not one of the subsequent revisions). At least 10 percent of fired cases cause a jam condition in which the bolt returns forward, picking up the next round from the magazine, and inserting it most of the way into the chamber.

However, the extracted and ejected empty case does not make it out of the receiver, and ends up lodged between the boltface and the rear of the barrel, typically above the newly-chambered round with the case head protruding from the ejection port. The extractors (2) and ejector seem to be operating properly. I completely disassembled the gun for a thorough cleaning and parts inspection. The only problem I noted was the tail was missing from the left extractor plunger.

With the plunger in place, the extractor works fine. I polished the feed ramps at the front of the cartridge guide and at the back of the barrel for smooth feeding. I have noted that the mouths of nearly all fired cases have been flattened at the 12 o'clock position (the firing pin strike is also at 12:00 on the case rim) since the ejector pivots the extracted case mouth upward far enough to hit the roof of the receiver at the upper rim of the ejection port during ejection.

READER FORUM CONTINUED

ORIGINAL PAGE 22

Some cases display a small crease in this flattened area as well. The ejection port appears to have been made using a large keyway cutter. This operation left semi-sharp edges where the ejection port meets the inside contour of the tubular receiver (possibly causing the creases noted above). I filed, stoned, and polished the upper forward edge to a smooth rounded profile. Unfortunately, the jam condition continues to occur on occasion with various brands of ammunition. Any known problems in this area? Suggestions?

Thanks much. Don Roberts Orland, California What you're encountering is a problem neither unique to the 550 or any other caliber .22 autoloader. Lead buildup in the chamber is slowing down extraction. The slower extraction is slowing the bolt, and the case is slapping against the inside of the receiver. The cure is to use an extension and a .22 finishing reamer on the chamber and advise your customer to use copper-coated bullets to avoid the problem reoccurring in the immediate future.

Lead heads tend to build up too quickly when a rifle is used often. .454 Casul Conversion? I have a friend who wants to put a .454 Casul chambered barrel on a Mauser 98 action. I'm wondering if it would be worth

the cost and if this is even possible. If it is possible, where can I find a barrel maker? Thank you. You didn't mention the present caliber of the Mauser. We'd be concerned about the chamber pressure and the receiver/bolt capability, and so should you.

Contact SAAMI Newtown, CT 06470) before undertaking the conversion. If SAAMI says pressure is not a problem, there are additional factors such as case-head diameter, bolt-face suitability, and possibly the extractor cut in the breech. Your friend might decide to consider a Magnum caliber that the rifle would adapt to more easily. Homemade Stain Follow-Up I'm a semi-professional gunsmith and I really love to restore worn-out throwaway guns.

My specialty is taking old, shot-out .22 LR rifles with nicks, dings, and dents and making them look and shoot like new. Then, often as not, I somehow end up giving it to some youngster just to get another shooter hooked on the sport of plinking" thus, my "semi-pro" status. However, I have worked as a professional woodworker, as my father did before me. Making wood stains was one of our little hobbies, so I particularly enjoyed reading Paul Mazan's "Stalking the Wild-Walnut Stain and Stock Filler" (December 06).

I must admit, I never thought of using walnut hulls; that was a good one. Somewhere, years and years ago, we came across a recipe for homemade stains. I can't take credit for this recipe, I can only pass it along, since Paul essentially requested information on other homemade stains at the end of his article. Leaves! That's what our recipe uses'walnut leaves, cherry leaves, maple leaves, whatever. Fall leaves make beautiful stains. Pick up fall leaves, hopefully, before too much rain soaks them.

Put them in a mixture of five parts water to one part household ammonia. The ammonia

ORIGINAL SOURCE PAGE

22

READER FORUM CONTINUED

ORIGINAL PAGE 23

really speeds the process of extracting the color from the leaves. It stinks when you use it, but it makes a really good stain. After soaking the leaves, strain the concentrate through cheesecloth, then add a teaspoon of alum powder (from the spice section in the grocery store) to stabilize the mixture. You'll have stain for years and years of use. Then you begin mixing colors. Walnut, as Paul noted, is very dark. Cut it with some maple, perhaps, to get a nice warm color. Put in a little cherry to add some red.

Experiment to create colors you won't find in nature. Water and ammonium hydroxide is the only solvent I've been successful with. I've tried various alcohols, acetone, mineral spirits, and other solvents, but with no success. However, I've also learned something interesting about homemade, waterbased stains. While grain-raising is a problem you simply have to deal with, there is nothing like homemade water-based stain for giving wood an instant antique look.

It's almost as effective on wood as color-case-hardening is on metal. The dull, warm color of homemade, water-based stain gives any wood the instant look of considerable aging. Nothing says authentic like putting the correct color of your own stain, followed by a handrubbed oil finish, on say, a post-64 Model 94, to make it look like it has been in your grandpa's gun cabinet for 50 years. Okay, I know that was a lot of verbiage for a little bit of information. I hope some readers have found some of it to be useful.

Zeke Corder Kuna, Idaho Mosin Misfires I hope you can help me with a problem. I'm working on what appears to be a Mosin-Nagant M1891 that has been converted to 8x57mm. The complaint is misfires. Can you provide me with a detailed procedure for stripping down the bolt? Also, in researching my back issues of American Gunsmith, I found an article by Brian E. Capps ("Sporterizing the Mosin-Nagant," April 05) that mentions that the firing-pin protrusion is adjustable, as well as a gauge for measuring it.

In the absence of this gauge, can you tell me what the protrusion should be and how it is adjusted? I've found information on this rifle to be very scarce, so any help you can give me will be much appreciated. On the web go to surplusrifle.com. Find your rifle on the list. Click. On the following page, click on "Disassembly of the bolt" in the lower right of the screen. A video in Windows Media will walk you through the disassembly/reassembly.

Note that the key to proper installation of anew firing pin is to have the rear of the pin flush with the end of the cocking piece and positioned as described in the video. Also, there's an excellent book on the Mosin authored by Lapin and available from North Cape Publications (northcapepubs.com). You didn't mention light hits as a cause of the misfires, but if reloaded ammo is being used, you might want to check to ensure the primers aren't seated too deeply.

Simonov SKS Information I'm considering purchase of a Simonov SKS 7.62x39 rifle. I have not found anything on this weapon in

my collection of American Gunsmith, but am wondering if you covered it in an earlier edition, or contemplate such an article in the future? Which model/version (Yugoslav, Chinese, Russian, Rumanian, etc.) do you consider the preferred one to purchase? I would appreciate any information and/or opinions you could offer or sources of additional information. Thank you. There was an article on the SKS back in 1999, but reprints aren't available for issues that far back. In lieu of that article, you should purchase a book *The SKS Carbine* from North Cape Publications. It covers origins of the carbine, its disassembly/reassembly and repair, and gives good advice on how to select one.

FYI: If we were in the market for an SKS, we'd lean toward the Yugoslavian, Rumanian, or Russian. S&W M422 Breakdown Could you tell me where I can find disassembly/reassembly instructions and an exploded view of a Smith & Wesson Model 422 semiautomatic pistol? Dennis Johnson Coeur d'Alene, Idaho Both your requests are answered by the folks at Gun Digest Their book on disassembly/reassembly dedicated to semi-auto pistols includes the S&W Model 622, which is a stainless-steel version of the 422.

And their book of exploded gun drawings includes the 422 along with 974 others. Ruger 10-22 Refinishing I'd like to know what to use to strip the old paint off a 10-22 receiver and what type of paint to use to refinish it. Thank you. Ruger has used various coatings on their receivers over the years. At one

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-BB4C1C012B-A1202-P24-F01. Know the rights holder? Please ask them to contact us.
AG-BB4C1C012B-A1202-P24-F01

(continued from previous page) time, that included one containing Teflon. They no longer use the Teflon coating, which was very difficult to remove. The factory tells us that in recent years they've been employing a baked-on enamel paint. Regardless of the coating, they advised that the use of harsh paint strippers could damage the metal substrate. They suggested using fine glass beads to blast off the old coating and then applying the baked-on enamel of your choice.

Keep in mind that the oven-curing temperature should be kept below that which could weaken the temper of the receiver. Most bake-on enamels, such as the ones available through Brownells, do not require a high-temperature cure. Gunstock Finishes I was hoping that you had a good stock finish or a recipe. I'm having a hard time finding one I like. I've tried all kinds and none of them give me a finish that I or my customers really like. Any help will be appreciated.

You weren't very specific about what you like in a finish. Glossy? Satin? Textured? The classic stock finish results from several coats of handrubbed oil, which is allowed to dry between coats. It is a slow laborious process, including multiple sandings, feathering, and pore filling of the wood. Handrubbed oil finishes can range from glossy to satin or even flat, but oil doesn't lend itself well to textured stocks. Textured finishes can be achieved by other methods, such as sprayed-on coatings.

Browning BDM Disassembly I recently received a Browning BDM in the shop for bluing. I am unable to locate any disassembly instructions on this model. I looked through my past issues of American Gunsmith and didn't find it there, nor do any of the DBI books cover it. I've had other Browning pistols apart, but this one has only slight similarities to them. If I have to, I can do it without guidance, but it would sure save a lot of time if I have some technical information to go on. Can you refer me to any such info?

Thank you. The BDM is similar to the BDA, for which take-down instructions appear in the DBI book on auto pistols. There are some differences worth noting, however. The BDM has a SIG-Sauerlike locking system wherein the barrel engages with a single large lug in the slide's ejection port. There is also a disassembly lever on the left of the frame which must be rotated downward to remove the slide. The slide stop differs from the usual Browning lever with only a small lip protruding from inside the frame.

This pistol has been out of production since the late 1990s. That's a shame, we think. It was quite slim for a high-capacity combat handgun and had a switch on the frame making it possible to go instantly back and forth between semi-auto and DAO. Marlin Model 60 Trigger Do you know of a replacement trigger or trigger parts for the Marlin Model 60 that will produce a lighter pull?

Have you done an article on this? There are no kits or special parts available that we know of.

The action of a Model 60 is complex and a difficult animal to deal with. We wish these popular rifles could be retrofitted with the newer Marlin 900-Series trigger, but unfortunately they cannot. See the article in the April 05 issue before attempting any changes. You may be limited to polishing all shared contact surfaces, including the pins.

And there is something else that's known to greatly improve the "feel" of the action: Highly polish the firingpin assembly tunnel within the breechbolt and the firing pin itself. Winchester Safety Switch I have a customer with a Winchester Model 88 who wants to change the safety from a left-handed to righthanded operation. Is this possible? And what's involved in doing it? You'll have to perform some disassembly, since the safety is housed in the trigger guard, along with its plunger and spring.

You can switch the safety button from left to right by grasping it in one hand, rotating it 90 degrees in any direction, and pushing it out. In doing so, you must use a punch to ensure you don't lose the spring and plunger. The punch will capture the plunger, so leave it in the hole. Push the punch out with the safety when you reinstall it. Rotate the safety 90 degrees. If it has engaged the plunger correctly, the safety button will remain in the guard.

SEARCHABLE ISSUE RECORD

Archive index

NSSF: Giuliani No Friend to Gun Owners American Gunsmith Editors	2	The Changing World Of Gunsmithing Arthur J. Hunt	14-15
Profiling the H&R 1871 Pardner Pump Shotgun Chick Blood	3-5	Buttplate Restoration with Epoxy Norman E. Johnson	16-17
Troubleshooting Ejection Failures on the Remington 1100 Dennis A. Wood	6-8	Working the Newer Marlin Lever-Actions David R. Chicoine	18-21
The Basics of Double-Gun Lockup Dave Norin	9-13	Reader Forum American Gunsmith Editors	22-24

Rights and corrections. Images without confirmed permission remain reserved in place. Authors, photographers, and rights holders may contact editor@gunsmithmag.com. Corrections to searchable text are tracked against the source-page record.



American Gunsmith

The complete searchable archive of a technical journal devoted to craft, repair,
maintenance, machining, and restoration.

GUNSMITHMAG.COM • EDITOR@GUNSMITHMAG.COM