

Erma EM-1

Démontage / Remontage



The ERMA-Werke Model E M1 .22 LR Self-Loading Rimfire Rifle

Cleaning & Disassembly

Overview (Read this First)

Disassembling and Reassembling the EM1 can be intimidating as it requires more than just a screwdriver. Most EM1's are never taken apart for cleaning. Cleaning is usually limited to whatever can be done without disassembling the rifle. When the EM1 eventually malfunctions repeatedly, it's not uncommon for an owner to sell it as if it's reached the end of its lifespan, rather than disassemble it and clean it.

The #1 reason an Erma Werke Model EM1 malfunctions is it has never been cleaned properly.

It hasn't helped that Erma Werke never produced detailed instructions on Cleaning, Disassembly, & Reassembly. So, here we are.

As you will see, disassembly and reassembly are not as difficult as building the courage to do it. The intent of the information contained on this page is to help you keep your EM1 clean and functioning. The cleaning instructions are from an Englishman who shoots competitively using an EM1, as does his wife. His maintenance routine is simple, has eliminated malfunctions in both EM1's.

Cleaning

Oil may be a great lubricant but it's also a magnet for dirt, gunpowder and other debris that will transfer to the cartridges and cause malfunctions. For this reason oil should be used very sparingly on the bolt and removed from the feed ramp, in and around the breach, and inside the chamber.

The EM1 should be cleaned after each use. Cleaning falls into one of two categories.

After each shoot (no disassembly required)

- clean the barrel
- clean the lead off the visible surfaces inside the receiver, bolt face and face of chamber using cleaning swabs/patches with a solvent that leaves no residue

Main Servicing (when initially purchased & every 800 rounds)

- Disassemble & Clean the Erma completely
- Reassemble following the instructions (includes suggestions on lubrication)

Disassembly

Preparing for Disassembly

Before you start, remove the magazine, pull the slide back and bolt open. Look into the breach and make sure there's no ammunition. It's a real good idea to get in the habit of keeping all ammunition out of the area where you'll be cleaning and/or working with any firearm.

The EM1 has a number of small parts that are easy to misplace or lose. Replacing those parts can be an unenjoyable never ending adventure. You might want to consider doing the Disassembly and Reassembly over a white sheet or other contrasting flat surface that inhibits parts from bouncing, in case you accidental drop something. It's also helpful to have a container in which the small parts can be kept together in one place.

Step One: Removing the Stock and Handguard

Remove the screw from the barrel band



Slide the barrel band forward, remove the handguard



Remove the screw from the bottom of the stock behind the trigger guard



Slide the stock slightly to the rear, lift up and remove the barrel and receiver assembly



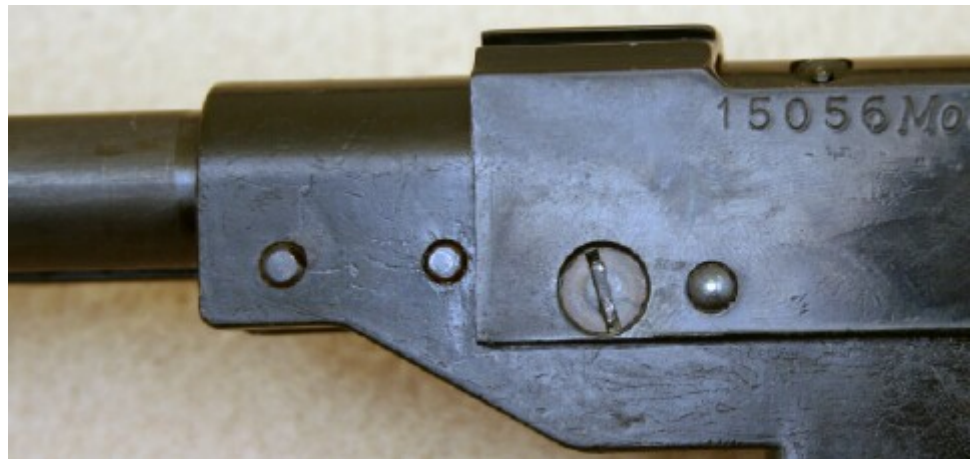
Step Two: Separating the Receiver from the Trigger Housing Assembly

Before you start this step, make sure the safety is set to the on position (vertical). This locks the sear under the sear plate and prevents the sear spring and plunger from popping out when you separate the receiver from the trigger housing.

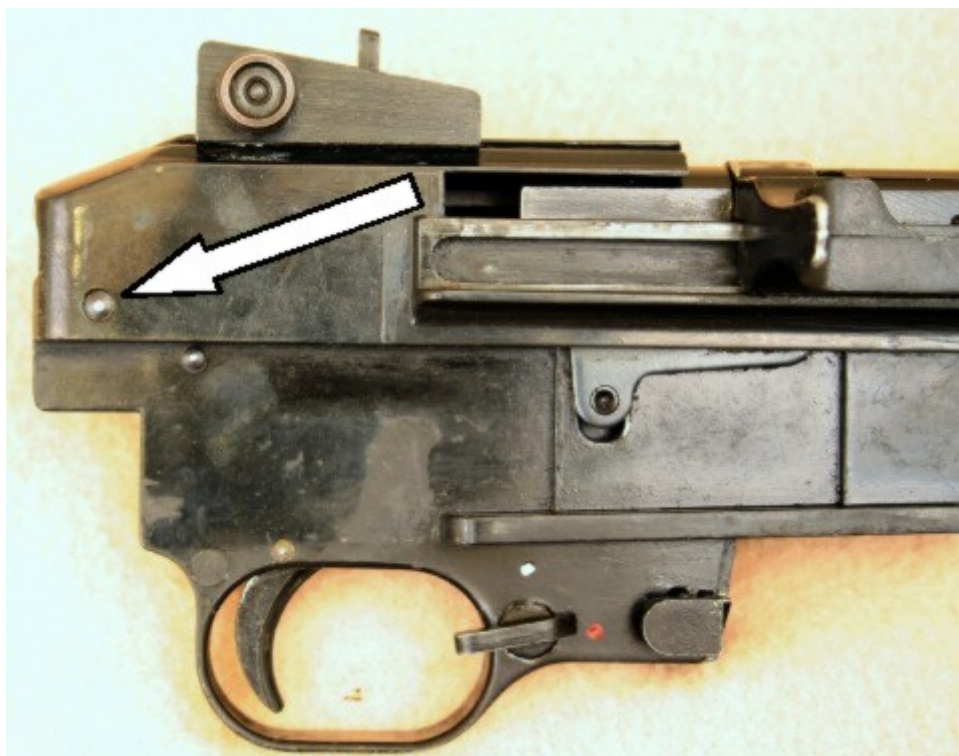
Turn the receiver and barrel assembly upside down, hold onto the spring and slide the guide rod forward and out of the spring and slide.



Remove the large screw from the left side of the receiver, drift out the pin next to it.



Hold the receiver upright, tap out the pin at the rear of the receiver



Keeping the receiver upright, slowly lift up on the back of the receiver assembly...



As you lift up on the rear, pay close attention to the slide arm and how it fits into the receiver assembly (circle), you'll need



to remember
this when
reassembling
the rifle

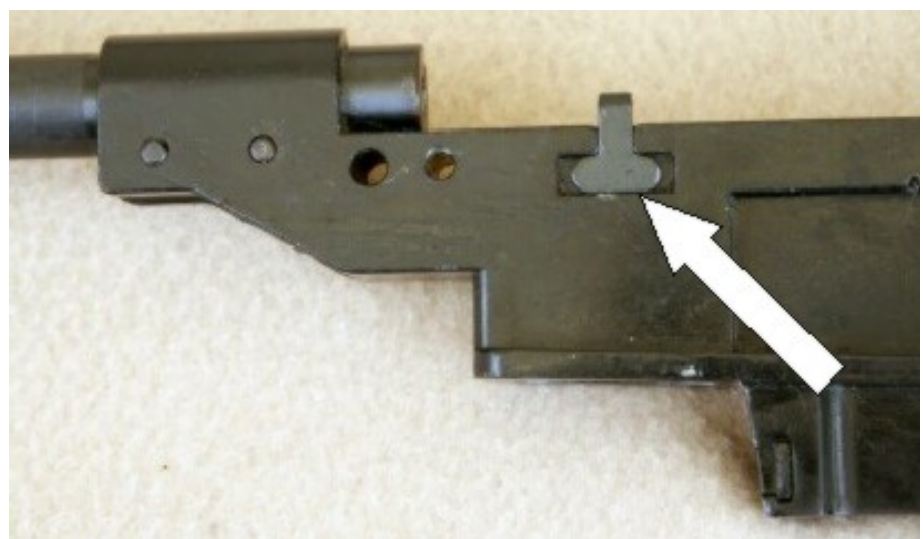


On the left
side and
right side of
the lower
receiver
there are two
parts that
will be
released
when the
upper
receiver is
removed.
These parts
may fall out
as you
separate the
two parts of
the receiver.



Not to worry,
just keep an
eye on them.

If you
separate the
receiver and
trigger
assembly
while
holding them
upside down,
you may
have several
small springs
fall out of the
trigger
housing.
Again, not to
worry if this
happens, just
monitor it so
you don't
lose
anything.



Step Three: Disassemble the Receiver Assembly

Notice the spring and guide rod are slightly offset from the center. You'll need to remember this during reassembly.

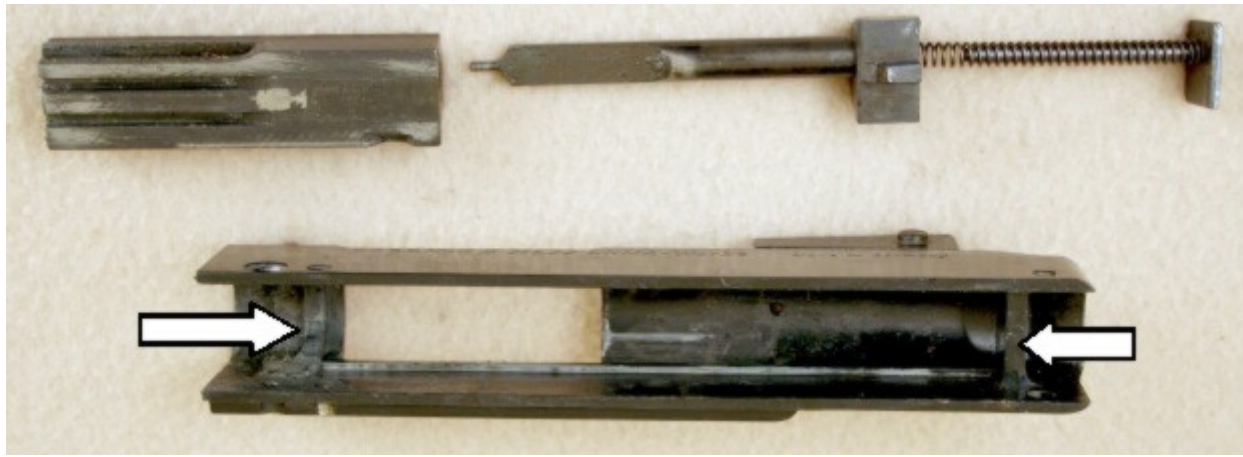
The receiver assembly is held together by tension.

Carefully and slowly compress the spring and guide rod on one end and bolt face on the other end, and remove the bolt group from the receiver.

Pay attention to how the guide rod and front of the bolt fit into the notches inside the receiver.



Once the bolt is removed from the upper receiver, the guide rod, spring, and firing pin can be removed from the bolt.

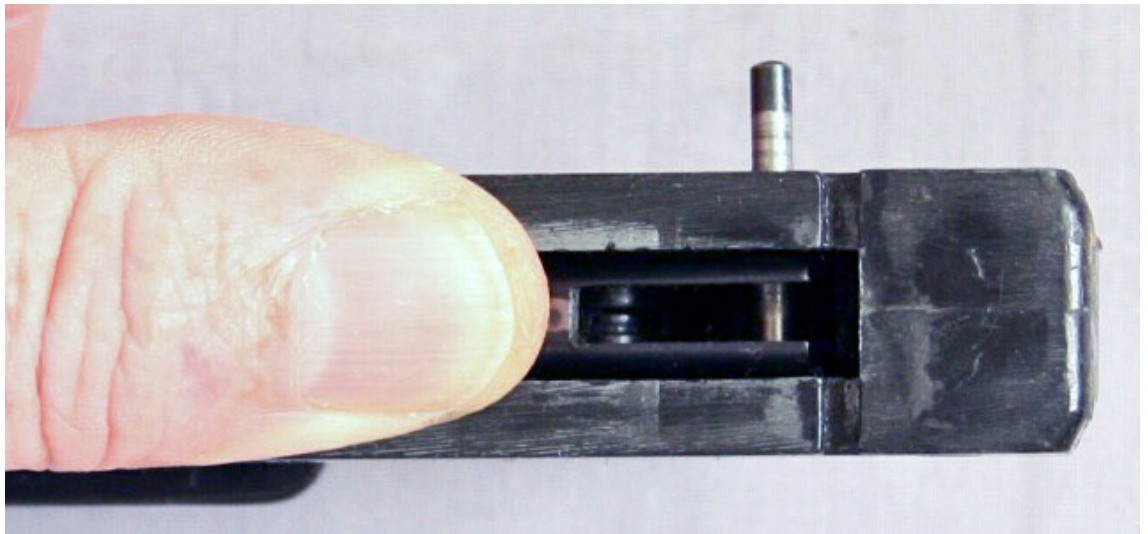


Step Four: Disassemble the Trigger Housing Assembly

Throughout this step, try to hold the trigger housing in the upright position.



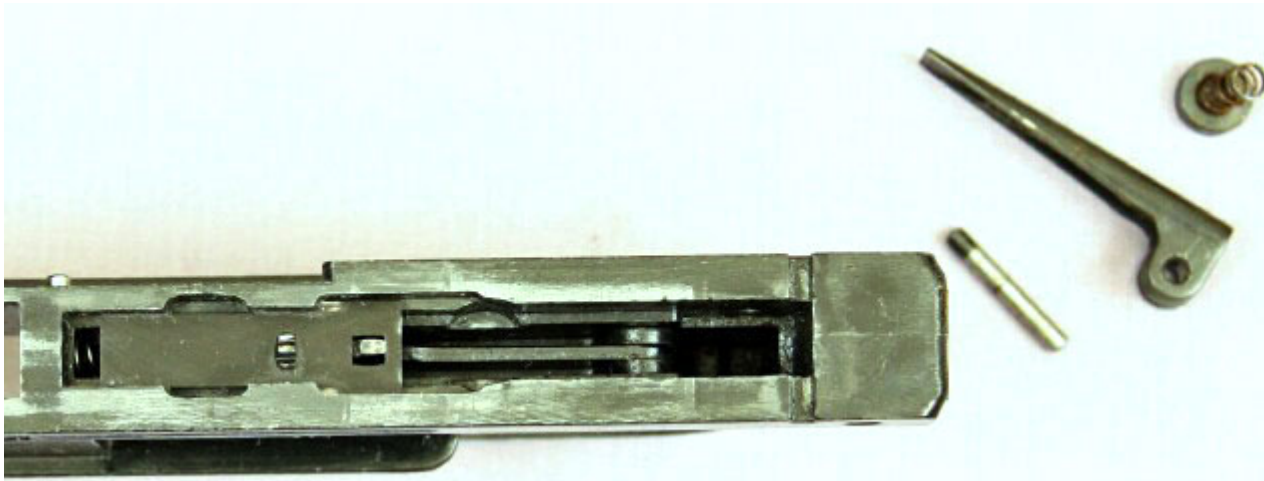
Place a finger or your thumb over the sear. Flip the safety to the off position (horizontal).



Pull the trigger to release the sear. Tap out the sear pin.

Remove the sear. Remove the sear spring and sear spring plunger





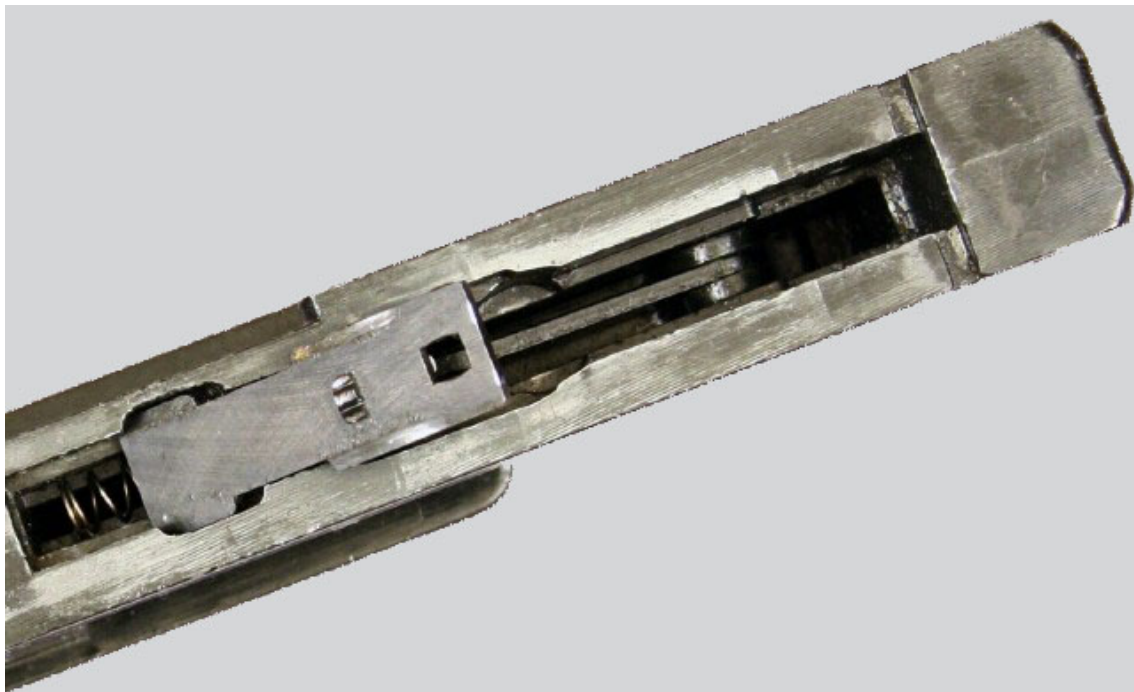
Tap out the
sear plate
pin



Push down
on the
trigger bar



Slide the sear plate to the rear aligning it with the notches that allow it to be lifted up and out of the trigger housing.



Remove the sear plate spring.



Lift the trigger bar, remove the trigger bar spring and plunger



Tap out the trigger pin



You are about to lift the trigger bar up and out of the trigger housing. The trigger will be attached to it by a small pin. While in the trigger housing the pin is held in place by the walls of the trigger housing. When you remove these parts, sometimes the pin will fall out. It's not a problem if it does, unless you didn't watch where it went. There is a small spring mounted in the underside of



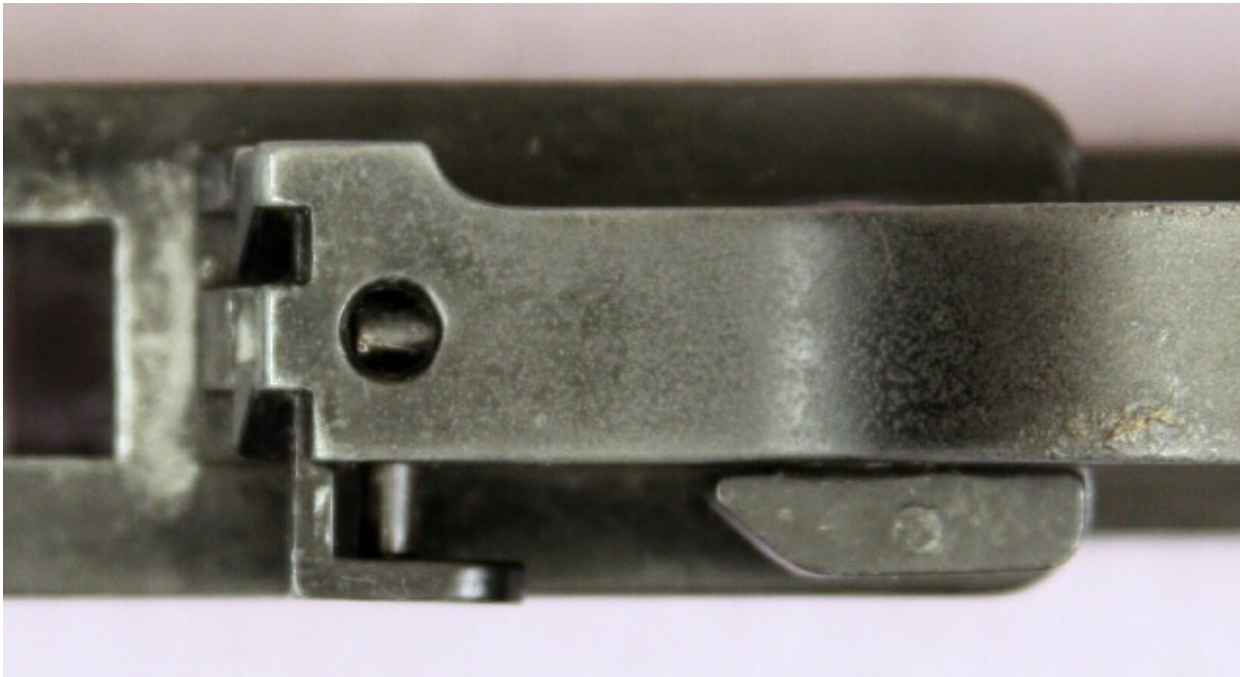
the trigger.
It should lift
out when
you remove
the trigger.
If it doesn't,
it's sitting in
the bottom
of the
trigger
housing and
needs to be
recovered.

Go ahead
and lift up
on the
trigger bar
and trigger,
making sure
you recover
the pin and
spring.



Step 5: Removing the Magazine Catch & Safety

Turn the trigger housing upside down. There are two springs under pressure that hold these parts in place. Both have small plungers attached. The springs and plungers tend to pop out when the pressure is released. Knowing this ahead of time helps in preventing it from happening or recovering the springs.



Lightly place your thumb on the face of the magazine catch. With your other hand, place the tip of a small screwdriver down into the hole on the bottom of the trigger housing behind the magazine catch. Wedge the tip into the front of the hole and push back on the small spring loaded plunger.



As the indentation in the back of the magazine catch clears the plunger, you'll feel the 2nd plunger push the magazine catch against your thumb.

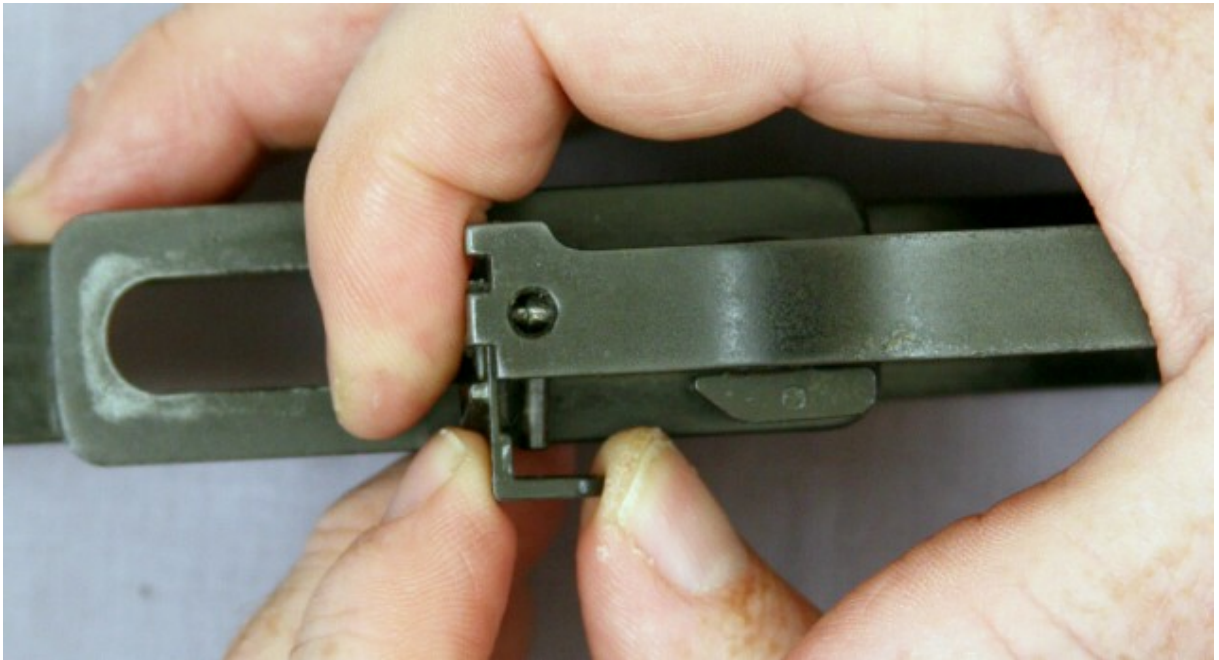


Slowly release the pressure on the plunger

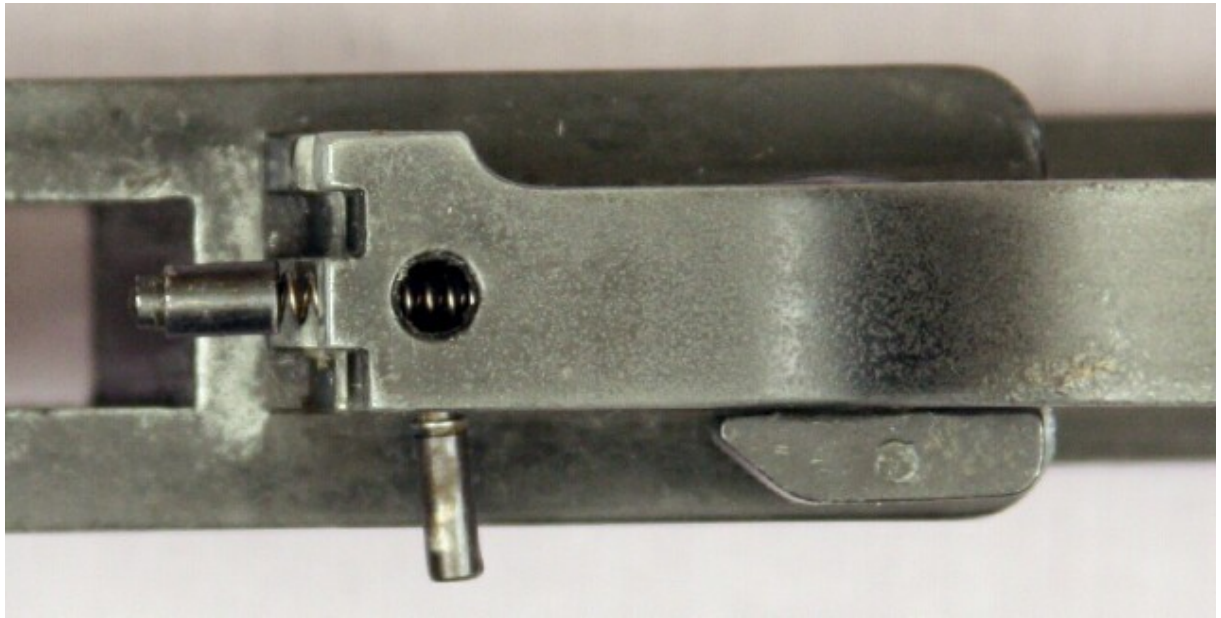
being held back by the screwdriver tip and let the plunger rest against the magazine catch. DO NOT remove the magazine catch yet.



Place a finger directly in front of the magazine catch. Slide the magazine catch off the trigger housing. When the magazine catch clears the spring loaded plunger it will pop out against your finger.



Move your finger and you'll see the plunger and the spring. Remove both springs and their plungers from the trigger housing.



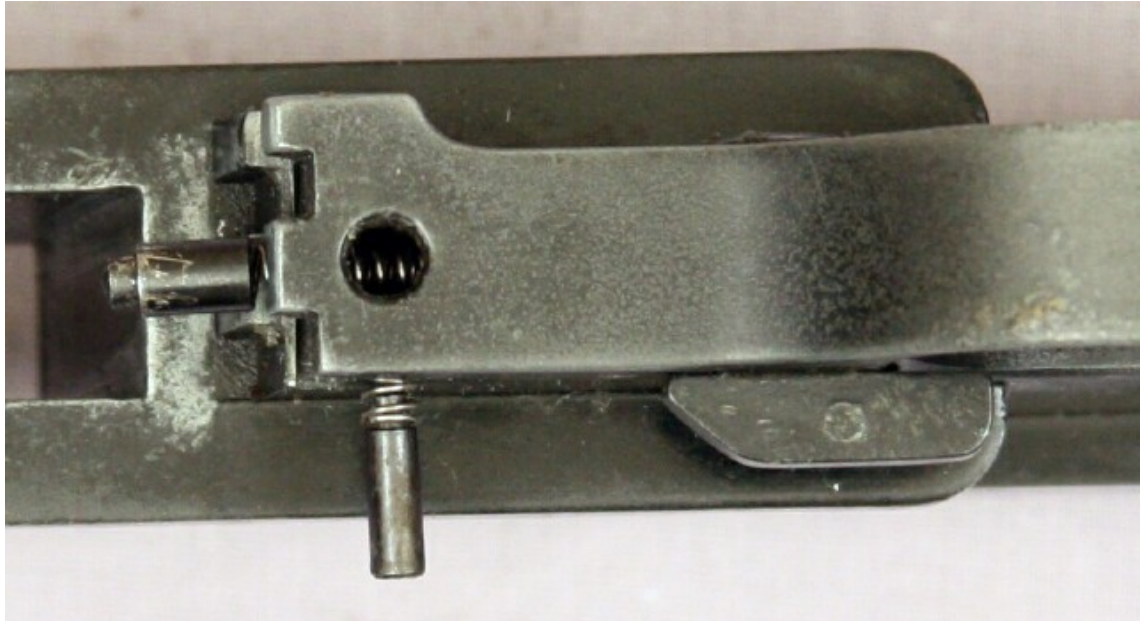
There should be a second plunger on the other end of the spring. If there isn't, it's still in the hole. When you have removed the 2nd plunger, remove the safety.



Reassembly

Step 1: Replacing the Magazine Catch & Safety

Insert the safety into the right side of the trigger housing. Note the orientation of the safety in the picture. Insert the springs and their plungers into the trigger housing.

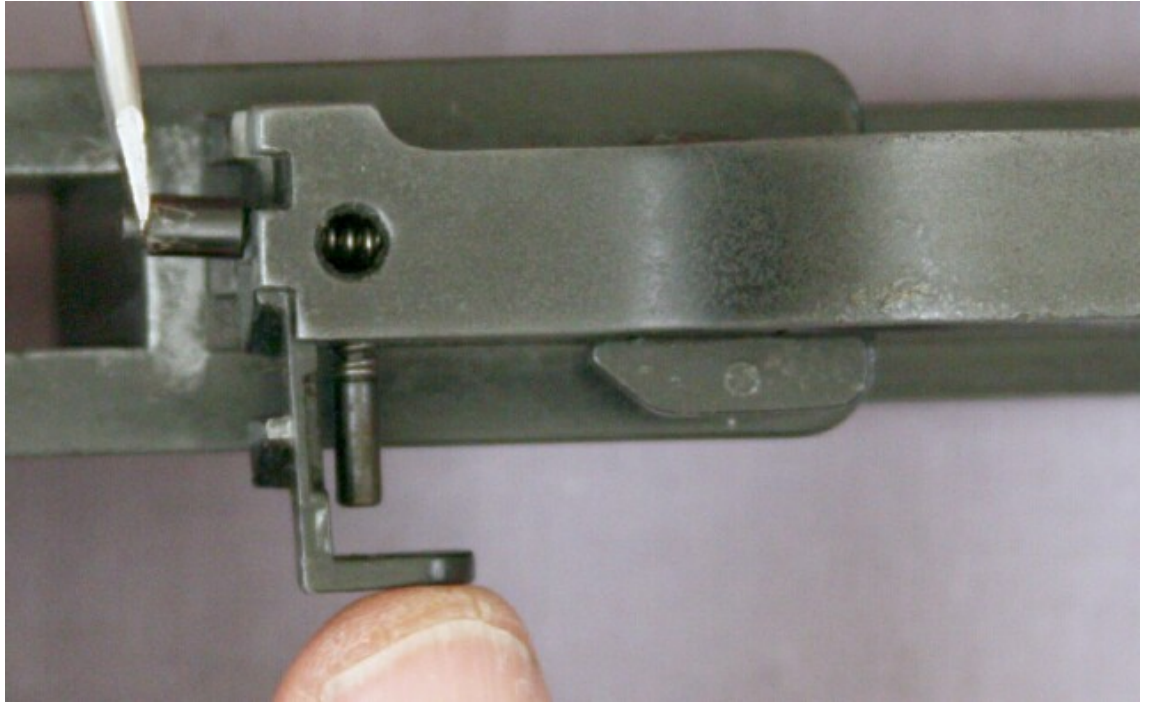


Here is where we see if you are reading this text, instead of just looking at the pictures.

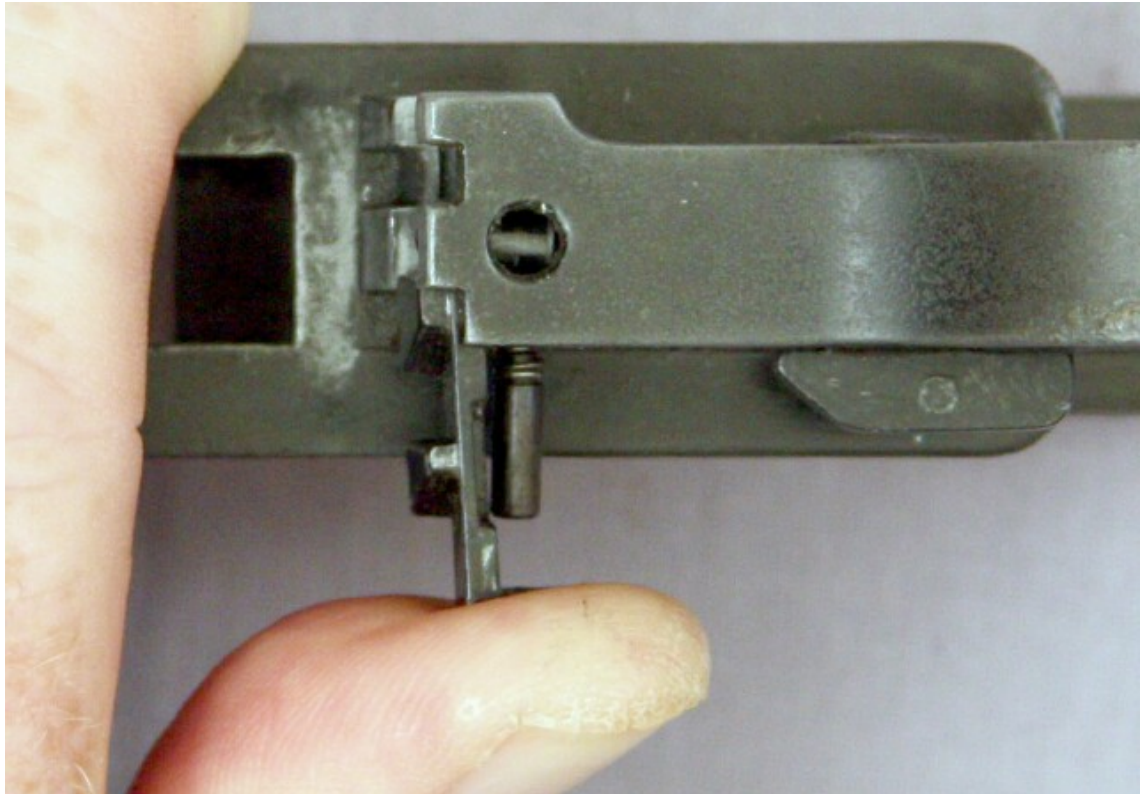
The concept is to force the plunger into the trigger housing while pushing in on the magazine catch. For illustration purposes, I used a



screwdriver
in the photo
because my
fat thumb
would
block what
I'm trying to
show. The
plunger has
a tendency
to hang up
on the
entrance to
the hole in
the trigger
housing.
Using your
fat thumb
and index
finger,
orient the
plunger as
you push it
into the
hole. At the
same time
apply fairly
strong
pressure on
the
magazine
catch with
your other
thumb.

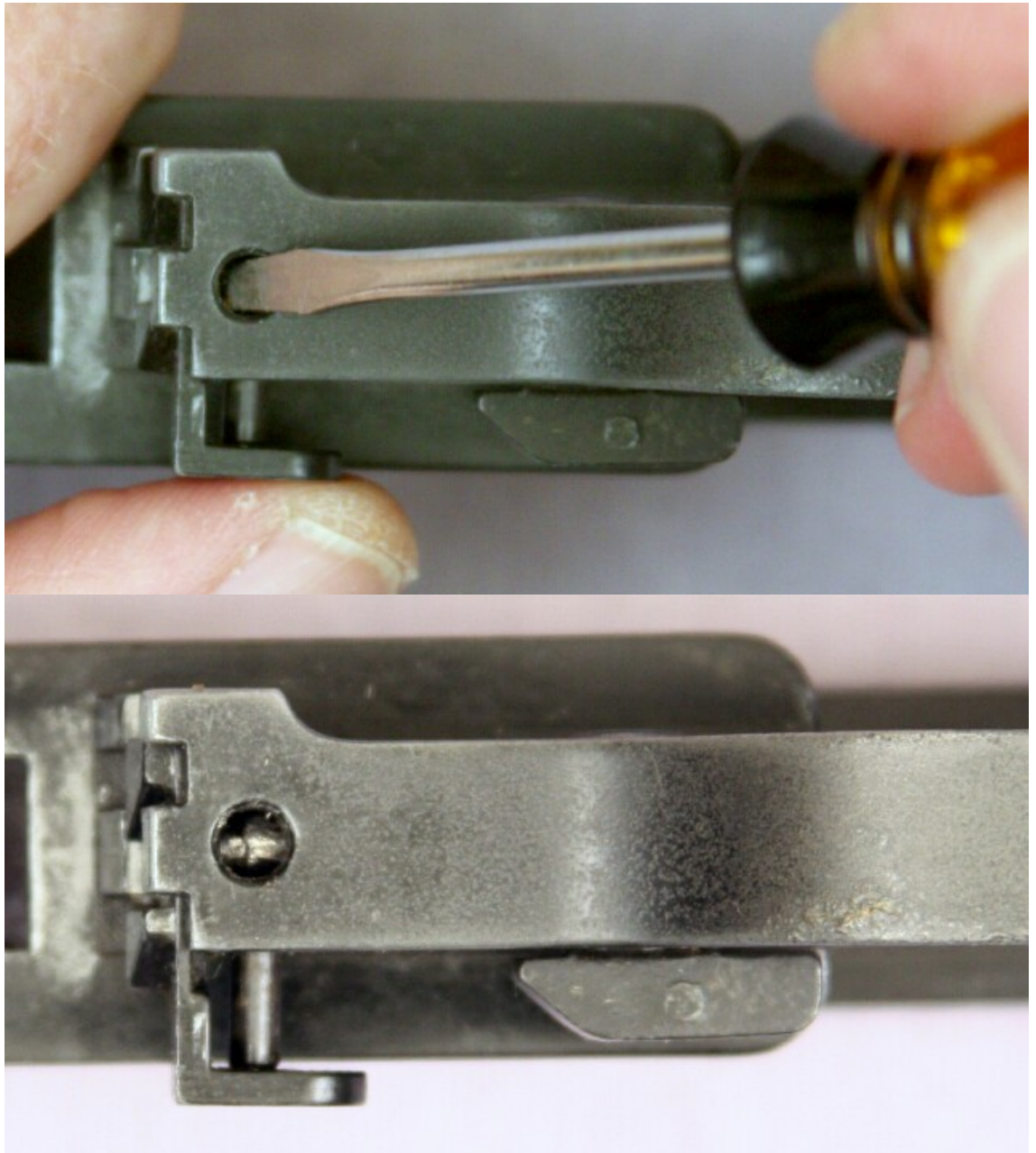


You will not be able to force the plunger all the way into the trigger housing with your thumb. When the plunger is half way through the hole, you'll here a "click". Your thumb pressure on the magazine catch will have forced the magazine catch against the forward half of the plunger. Note the index finger position, which should actually be a little closer in case the plunger and spring pop back out. Keep the strong pressure on the magazine catch.



Using the small screwdriver, force the plunger back away from the magazine catch.

When the plunger is out of the way, your thumb pressure on the magazine catch will snap the magazine catch into place.



Step Two: Assemble the Trigger Housing Assembly

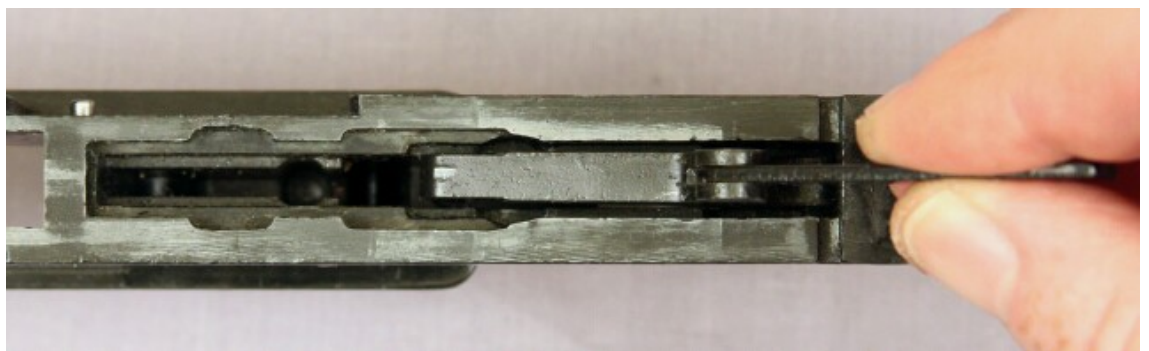
Throughout this step, try to hold the trigger housing in the upright position. Sparingly oil the pin holes to assist reassembly and all surfaces



that come
in contact
with the
sear.

Make sure
the small
trigger bar
pin is
inserted to
hold the
trigger and
trigger bar
together.
Insert the
trigger
spring into
the notch in
the bottom
of the
trigger. The
fit should
be tight
enough to
hold the
spring in
place. If it
isn't, insert
the spring
into the
round
notch down
inside the
trigger
housing.

Insert the
trigger and
trigger bar
into the
trigger
housing.
There is a
groove
towards the
rear
interior of
the trigger
housing
(look back
two pics)
the sides of
the trigger
slide down
into

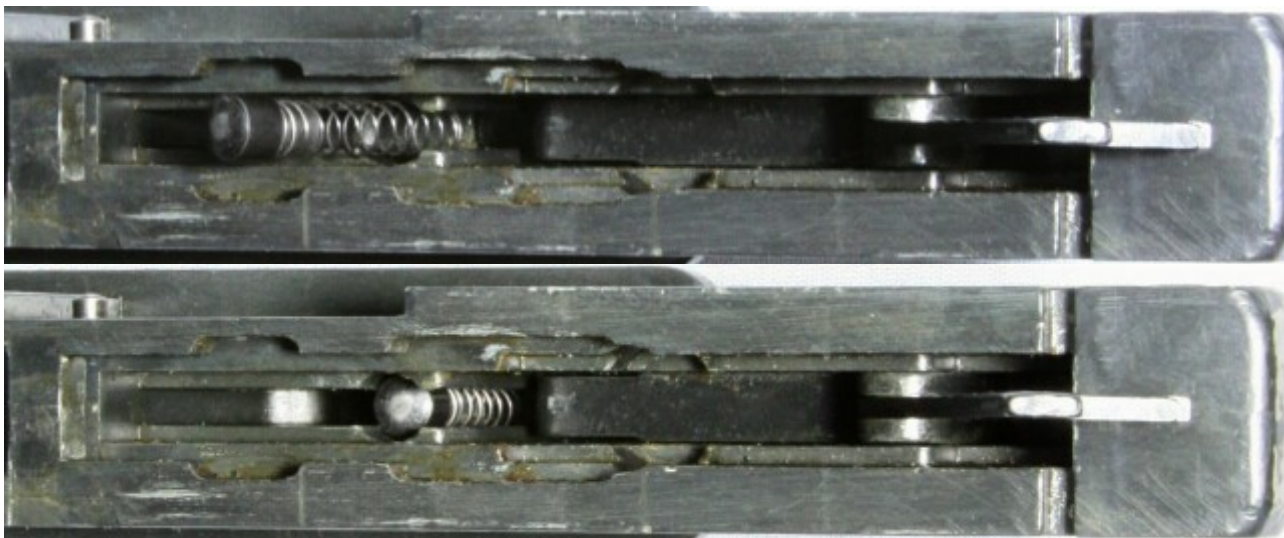


guiding the trigger slightly forward.

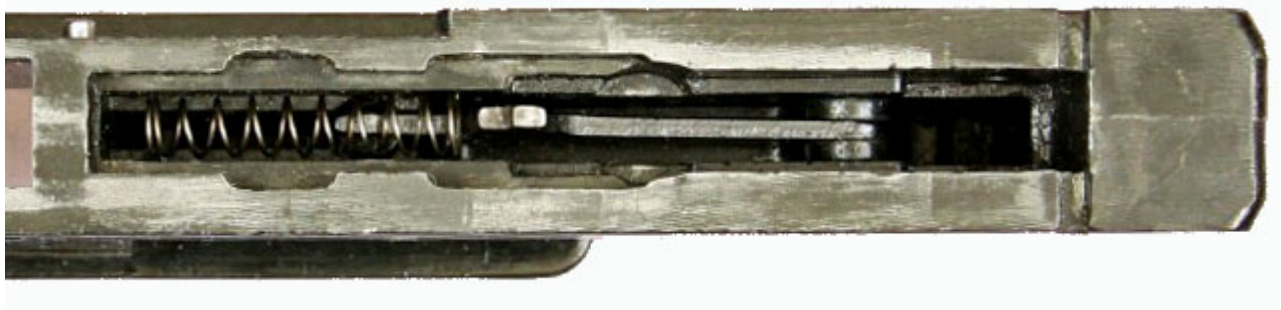
Pull down on the trigger to align the holes in the trigger and trigger housing, insert the trigger pin



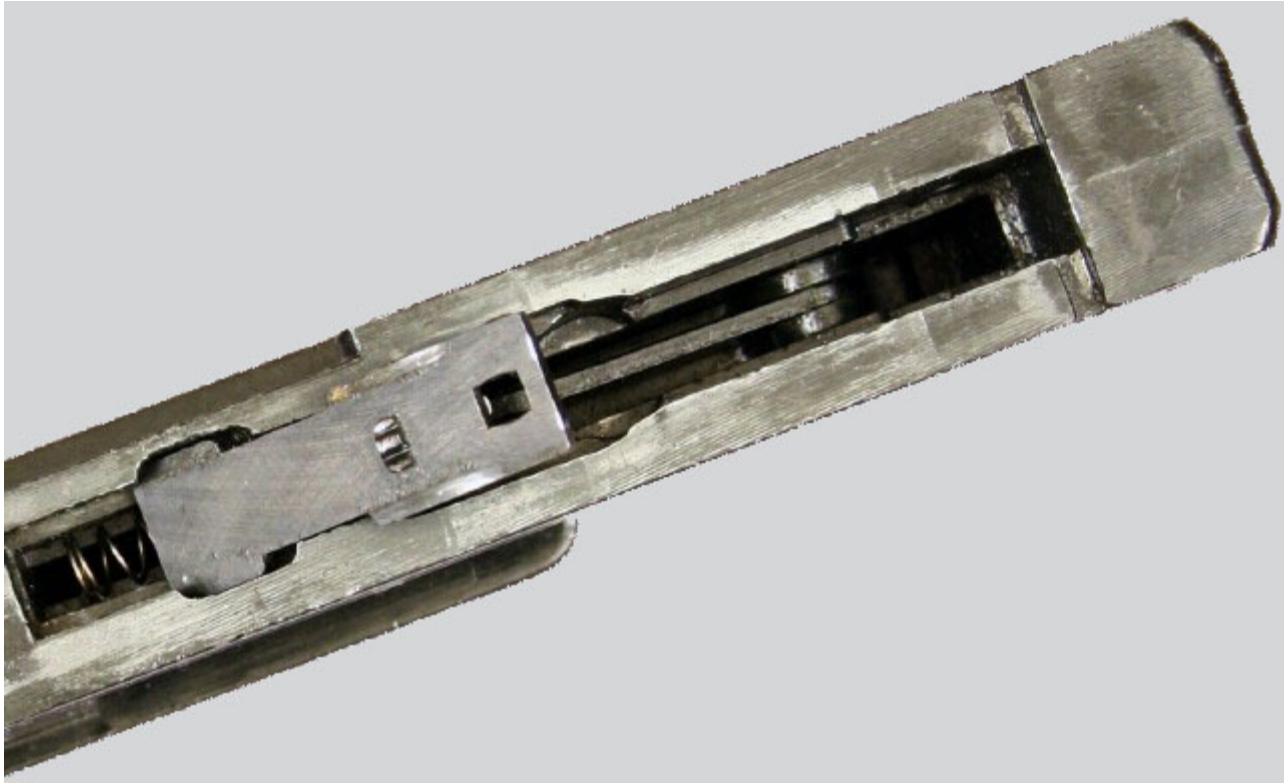
Lift the trigger bar. Insert the trigger bar spring and plunger into the trigger housing



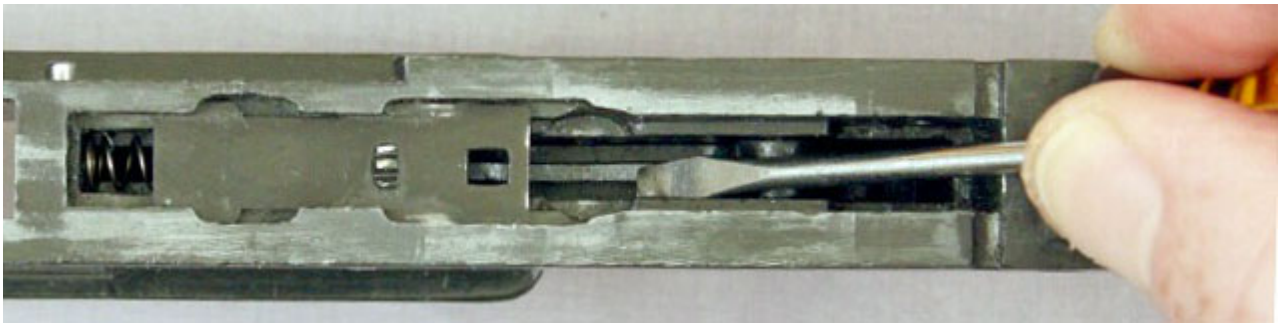
Lower the trigger bar onto the trigger. Insert the sear plate spring.



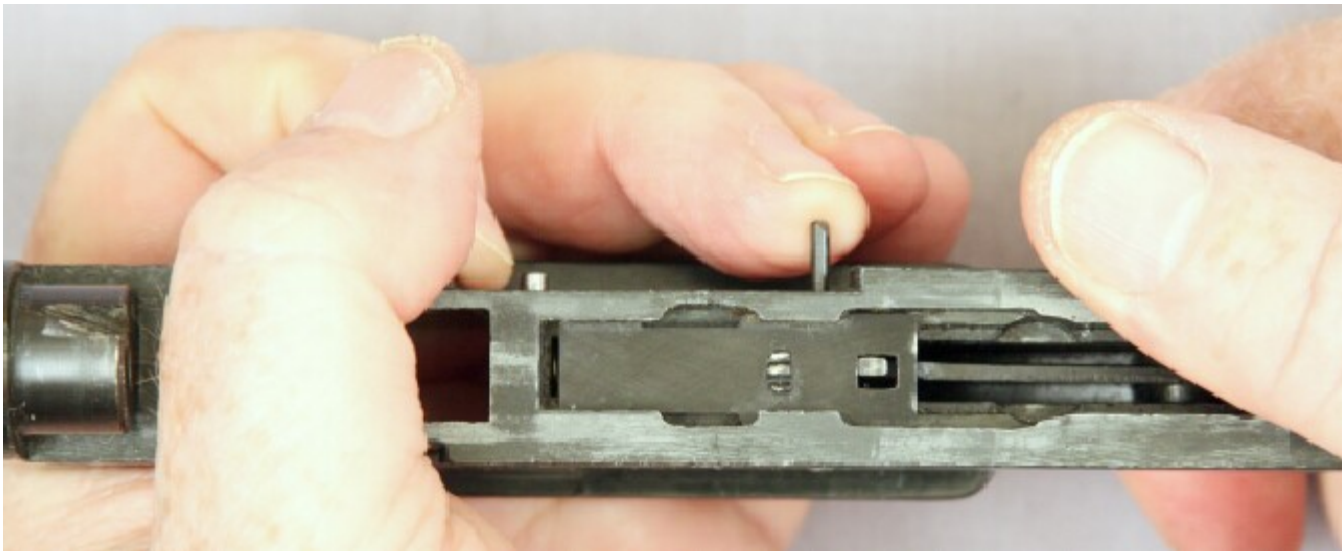
Place a pin tip of oil on each underside of the four flanges of the sear plate. Insert the sear plate into the notches that allow it to be placed into the trigger housing.



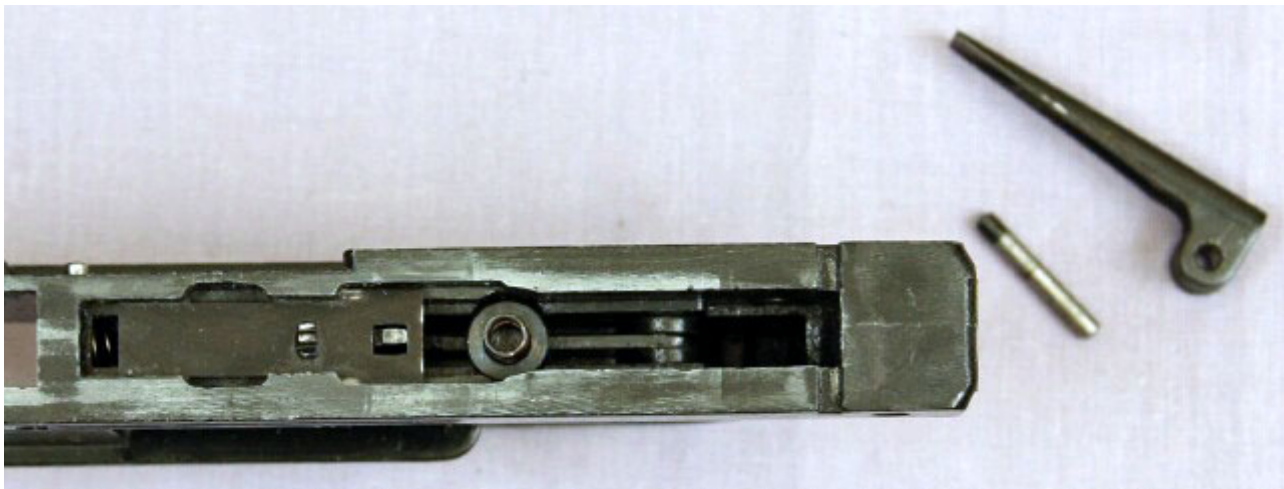
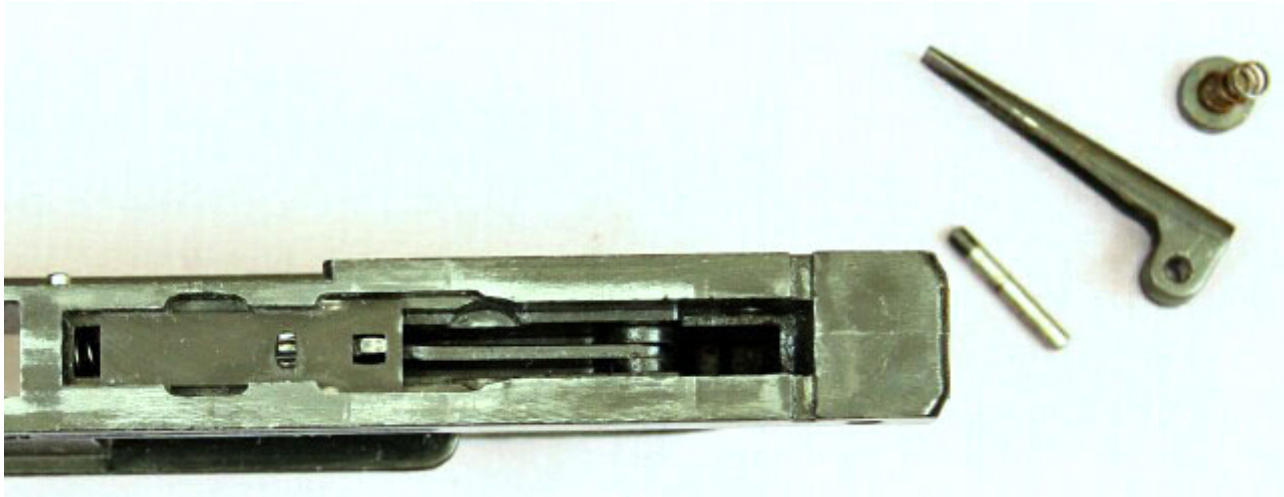
Push down on the trigger bar and forward on the sear plate. Align the top of the trigger bar to fit in the notch in the sear plate.



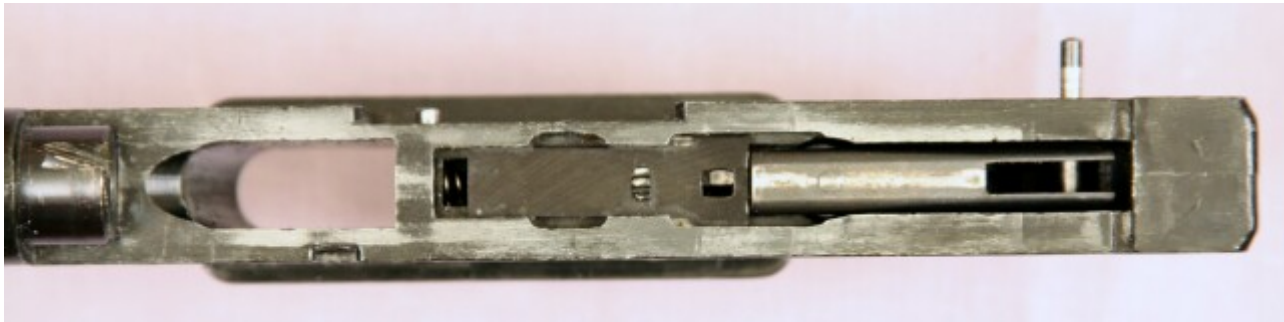
With the safety off, pull back on the trigger, which will move the sear plate forward. Insert the sear plate pin.



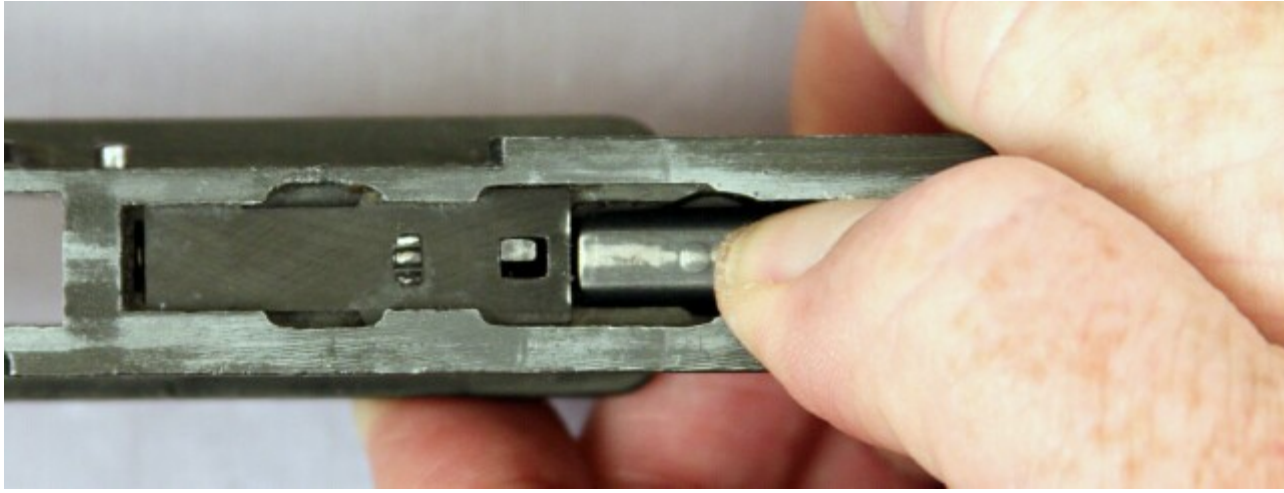
Insert the sear spring and sear spring plunger into their notch in the trigger housing



Place a pin tip of oil on the edge where the sear tip rests on the sear plate. Insert the sear into the trigger housing. Align the hole in the sear with the hole in the trigger housing, insert the sear pin.



Pull the trigger and push the sear under the sear plate. Release the trigger.



Step Three: Assemble the Receiver Assembly

Rub a small amount of oil on the firing pin and outer part of the firing pin spring. Reassemble the bolt by inserting the firing pin into the bolt. Insert the spring over the guide and both into the firing pin. DO NOT place the bolt assembly into the upper receiver at this point. Just note where it fits



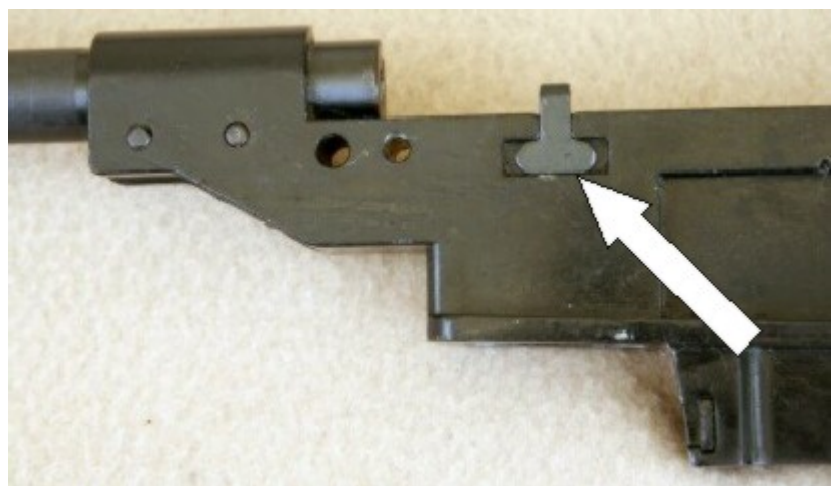
in the upper receiver.

Step Four: Assemble the Receiver to the Trigger Housing Assembly

Sparingly oil the pin holes to assist reassembly.



Fit the sear release to the right side of the lower receiver. Fit the ejector to the left side of the lower receiver. Hold them in place.



Lucky for you, and me, someone figured out an easier way to reassemble the bolt, receivers, and slide together.

The next four photographs and descriptions have been provided courtesy of Gene Temple. They have replaced my fumbling fingers with a much simpler method and explanation.

Slide the bolt on over the ejector. (If the ejector falls out it can simply be reinserted from the side at this point.) Note the firing pin, spring and guide almost in place.



Make sure the orientation of the spring guide is correct and push it in until the rear of the guide can engage the notch in the lower receiver, as shown.



Place a small amount of oil in the upper/lower 'T' channels of the slide. Place the operating slide into the upper receiver. Tip the upper receiver slightly forward and make sure the end



of the charging handle/slide goes under the barrel.

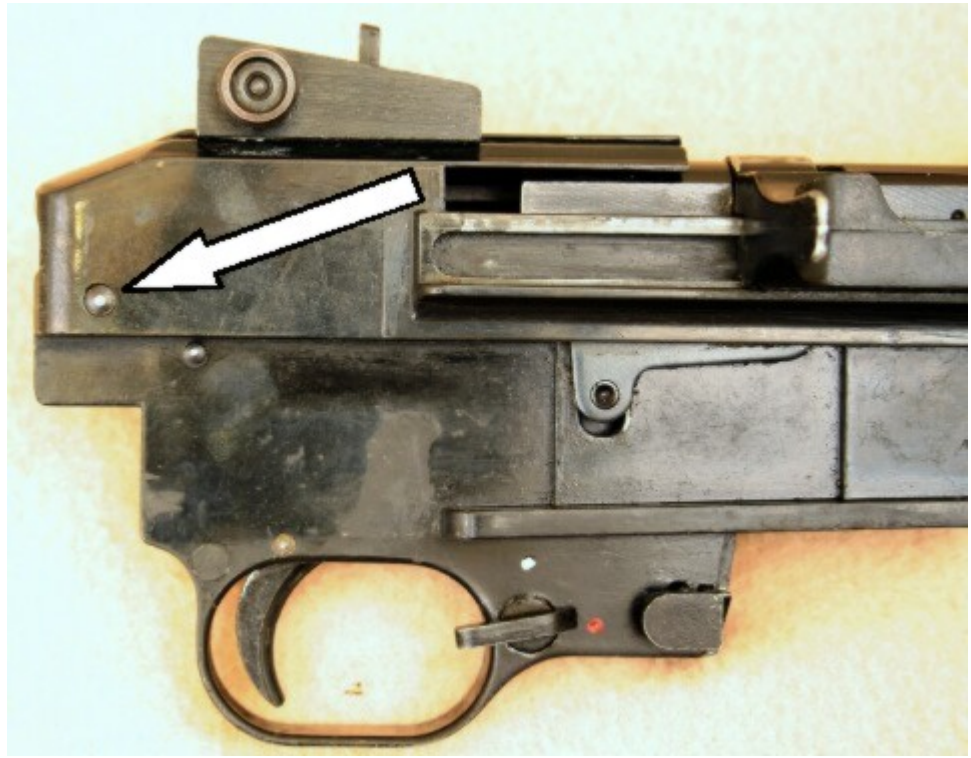
Then, carefully place the upper receiver over the lower receiver, watch the pin and bolt holes for proper alignment.



As the upper receiver seats onto the lower receiver, line up the tab on the charging handle/slide with the slot in the top of the bolt.



Tap the pin at the rear of the receiver in place



Replace the large screw into the left side of the receiver. Tap the pin to the right back in place.



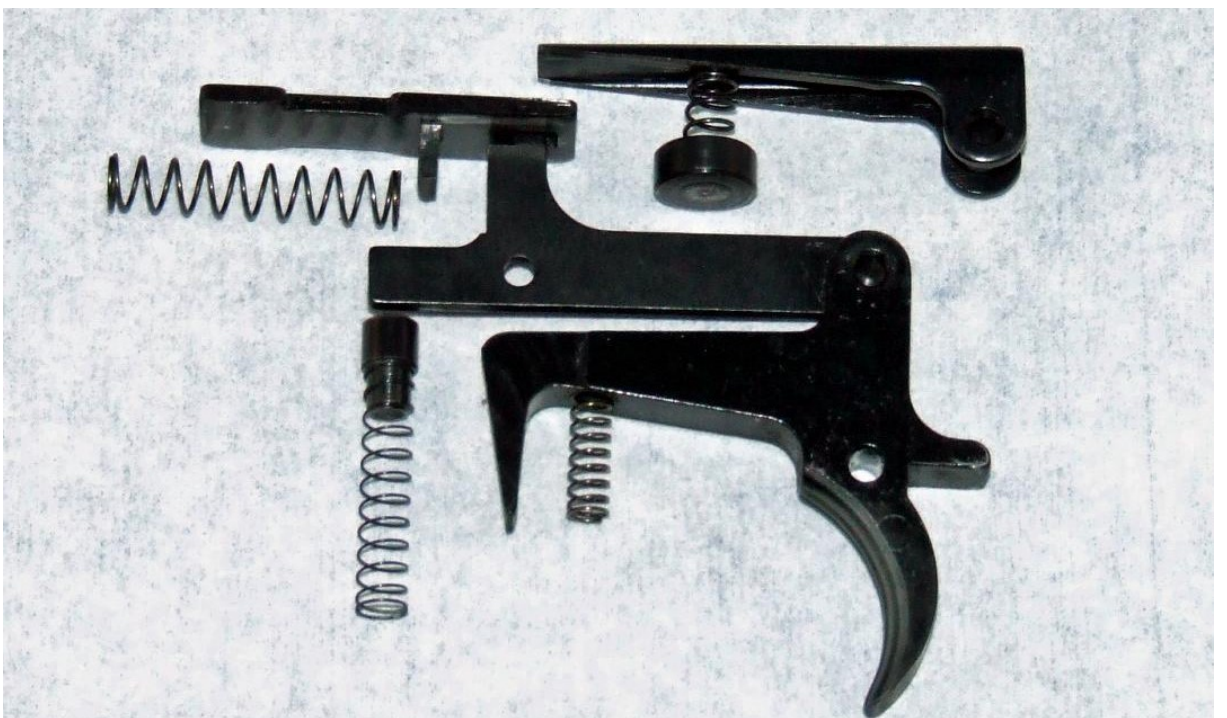
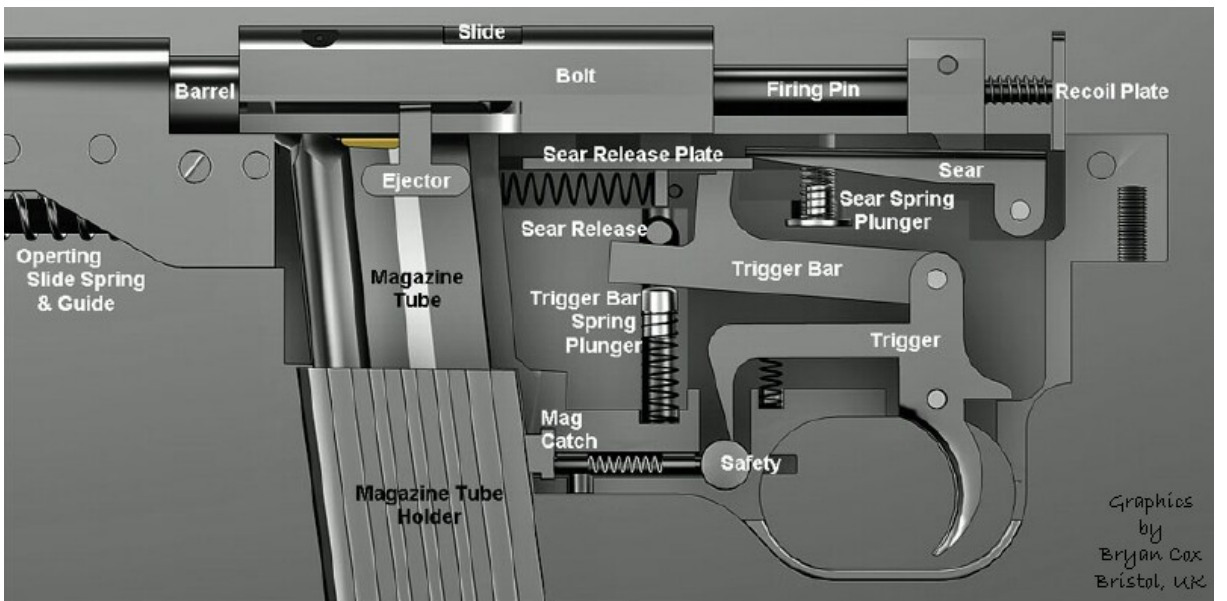
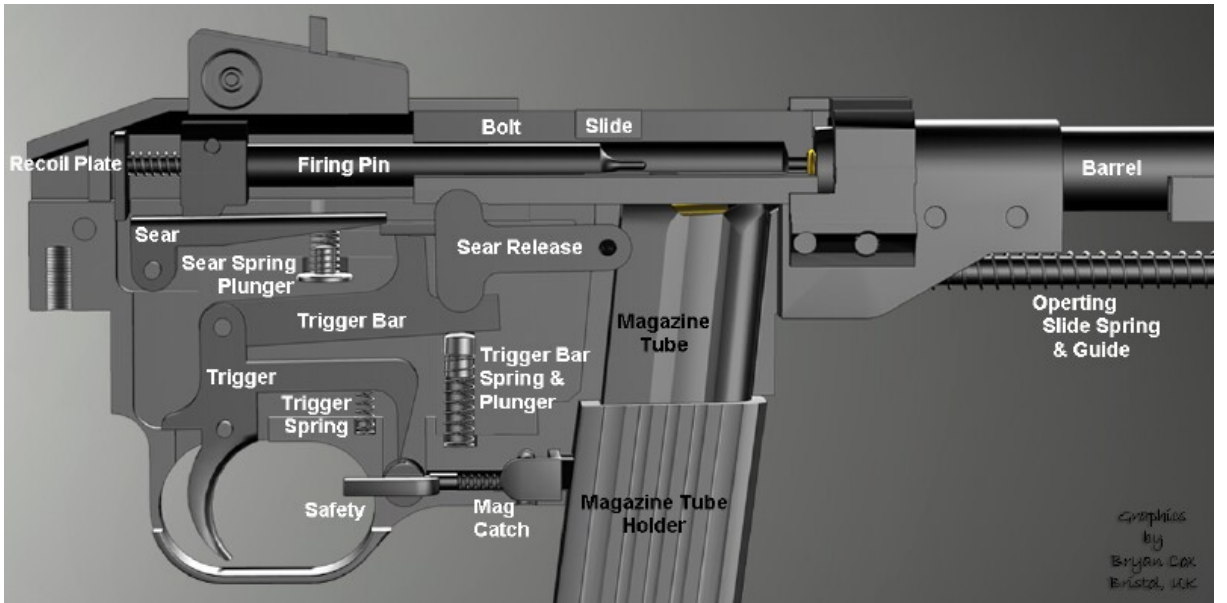
Turn the receiver and barrel assembly upside down, slide the guide rod through the front of the slide and onto the spring until the guide rod fits into the hole at the back of the slide and is flush with the front of the slide.



Step Five: Replace the Stock and Handguard

Place the receiver and barrel down into the stock. Reinstall the screw behind the trigger guard. Put the handguard in place, then slide the barrel band over the front of the stock and handguard snugly. Replace the screw in the barrel band.







Unraveling the Erma Werke Model EM1

