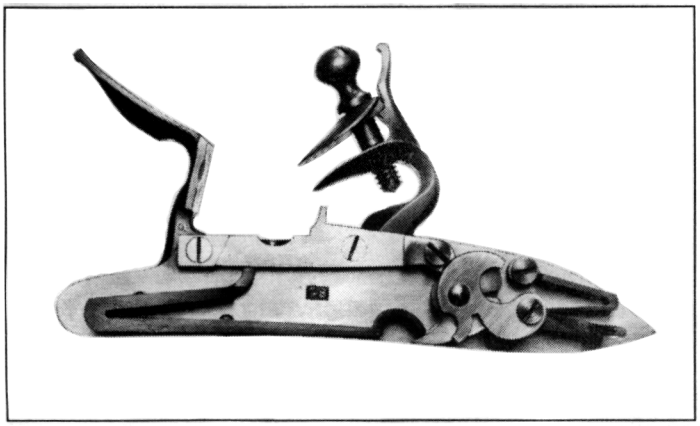
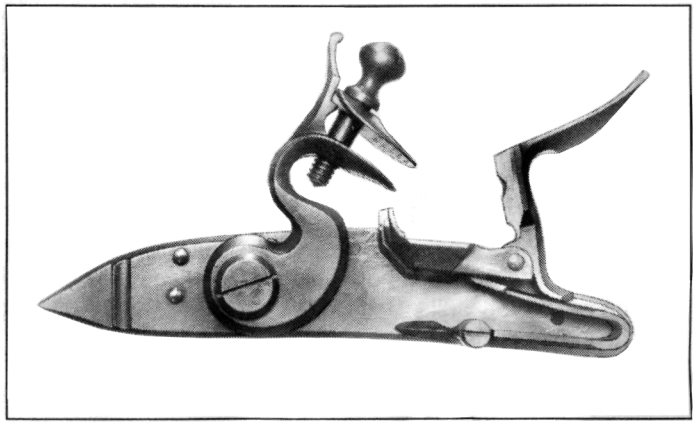
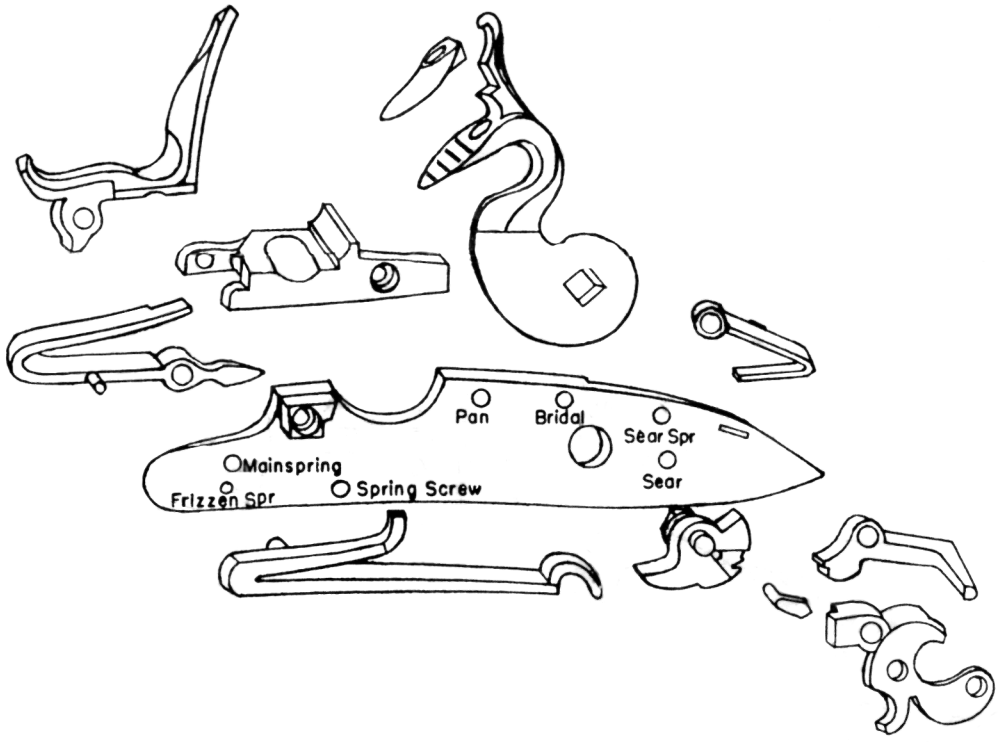
**REVOLUTIONARY PERIOD FLINT LOCK**





- Finest through hardening steel
- Fly in tumbler
- Precision components
- Sizes 5 1/4 X 1 (Rifle) - 4 3/4 X 7/8 (Pistol-Rifle)




# SILER LOCKS

— A DIVISION OF —

**Jim Chambers Flintlocks, Ltd.**

Route 1, Box 513-A

Candler, North Carolina 28715

**(704) 667-8361**

# INSTRUCTION SHEET
## *(RIFLE SIZE FLINT)*

**DRILLS NEEDED:** 5/64, 7/64, 9/64, 11/64, 15/64, 5/16, No. 19

**TAP NEEDED:** 1/4-20, 8-32

**PLATE:** Drill with 9/64 drill all holes that are punch marked in plate except "spring screw" and "frizzen spring," which should be 7/64 drill. Use 8-32 tap to thread all holes now drilled except "mainspring" and "frizzen spring". Refer to FRIZZEN SPRING before drilling "spring screw" mark.

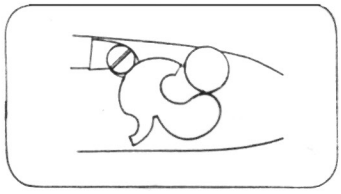
**PAN:** Install pan in place and drill with 9/64 drill through both pan and plate. Drill pan hole to depth of screw head with 15/64 drill. Remove pan and clearance drill remaining part of hole with No. 19 drill. Tap plate with 8-32 tap.

**FRIZZEN:** Install pan on plate and screw into place. Position frizzen on pan in its "closed" position and all the way back against fence of pan. Clamp frizzen to pan and beginning at punch mark in plate drill clear through plate, frizzen and pan bridal using 9/64 drill. Leave clamp in place and with drill No. 19 drill back through plate and frizzen but NOT through pan bridal (which must be threaded with 8-32 tap.) Counter bore hole in plate using 15/64 drill to depth of screw head.

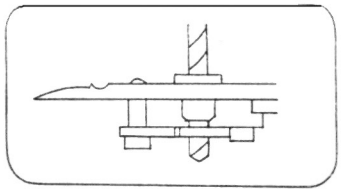
**FRIZZEN SPRING:** The "spring screw" punch mark may not allow proper tension of this spring. The surest way is with frizzen in the open position, and with 1/8 inch of compression at sharp pointed spring tip, clamp spring tightly to plate. Start drilling with No. 19 drill and then complete drilling with 9/64 drill. Tap while spring is still clamped to plate.

**BRIDLE:** Drill with No. 19 drill through thickest part of the bridle and install on plate with 8-32 screw. Screw plastic locator into "sear spring" hole and pivot rear of bridle against it (see A). Mark bridle by threading a tap into "sear" hole from outside of plate. Remove bridle, center punch the mark and drill with No. 19 drill. Replace bridle on plate with its two screws, insert plastic drill guide in tumbler hole in plate and drill with 11/64 drill (see B).

**A**



**B**



**TUMBLER:** Chuck large shaft of tumbler in lathe or drill press and true up other shaft to 11/64 dia., then chuck small shaft and true other one to 5/16 dia. Both sides of tumbler should be smoothfaced during this operation. Drill hole for fly in fly recess NEARLY through to opposite side of tumbler using 5/64 drill. Center punch squared face of large shaft and drill and tap using 9/64 drill and 8-32 tap. Go slow here backing tap out frequently or it may break off in tumbler and ruin it.

**SEAR:** Drill sear using No. 19 drill.

**HAMMER:** Thread with 1/4-20 tap.

**HARDENING:** Frizzen, tumbler, sear and fly are hardened by heating uniformly to 1500 deg. (this is bright red) and then quickly quenching in a quart or so of light weight oil, (never water), moving part slowly around in oil until cool. If hard it will not file. The springs are already heat treated.

**TEMPERING:** Heat FRIZZEN for 1 hour at 375 deg. (62-64 Rockwell C)
Heat TUMBLER, SEAR and FLY for 1 hour at 600 deg. (54-56 Rockwell C)

Pre-hardened parts cannot be supplied by us as they cannot then be drilled and tapped. Nor can we be responsible for possible failure due to assembly, heat treating work, etc. which is beyond our control.

Every effort has been made to supply high quality materials, and when properly done you will have the very best lock available today.

# HOME HEAT TREATING THAT WORKS

The term "heat treat" refers to two operations: first to harden (heat and quench), and second to temper (soften) to a useful hardness. The tool steels used in Siler locks will harden clear through when quenched (immersed) in oil alone, therefore water should not be used to quench since it can cause cracks to occur.

## HARDENING

The most successful hardening equipment is some sort of open flame such as acetylene torch, forge, or propane torch (MAPP gas sold at Sears produces more heat than propane). When using propane or MAPP gas two or more torches are needed for parts as large as the frizzen.

An electric furnace is not suitable for hardening since it has no flame and too little oxygen. It can remove carbon leaving a soft surface, but it is excellent for tempering since it does not adversely affect carbon at these lower temperatures.

Twist each part on the end of short lengths of wire (so it can be hand held and quenched easily) and heat it uniformly to a bright red (1500 deg.) then quickly immerse it in a quart or two of light motor oil. Move it around in the oil for about 30 seconds, then leave it in the oil to cool. It should harden on the first try, but if not successful the same procedure can be used again. Success means too hard to file.

## TEMPERING

Hardened parts have to be softened to a useful hardness by heating to specified temperatures. This can best be done with a furnace with a temperature indicator, or next best with a kitchen stove.

Another method that requires a little more skill, is by color. The part must be polished and then placed on a half inch of sand in a container such as a large jar lid. When heated slowly on the eye of a kitchen stove, in good light, colors can be seen in stages from straw, then tan, brown, purple. blue, gray. Parts should be removed from the heat when the following appear, in order of their appearance:

*FRIZZEN: pale yellow (375 deg. RC 62-64)*

*SEAR, TUMBLER, FLY: full blue with some fading into gray (600 deg. RC 54-56)*

## WAY OUT OF A BAD HARDENING TRY

Overheating during hardening, or use of an electric furnace can decarbonize the surface metal .002 or .003 deep. If grinding that amount off does not expose hard metal, Kasenit (case harden compound) will restore the surface. After so treating do not quench but let air cool, then wire brush compound off, reheat and quench in oil, then temper.

This steel will not decarbonize when properly done, but case hardening can be used to salvage an improper job.