Breech-loading Flintlock Pistol

Construction notes S. Wardlaw, M.D. 19 December, 2012

General:

The dimensions for the drawings were taken from a breech-loading flintlock pistol I constructed a few years ago by the 'cut and try' method, so some dimensions were normalized from the original. There will be some fitting required, even if all the parts are made to the exact dimensions.

The web page http://tinyurl.com/breech-flint has much more information. Please see it.

A point to remember:

The barrel width is a key dimension, so get the barrel first to confirm its width and make the receiver channel to fit it. The same is true for the lock.

Barrel:

The barrel used for this project was an old Douglas .36 caliber rifled pistol barrel in 13/16" straight profile. Any other barrel in a straight profile could also be used. The breech section of this pistol was made by cutting a portion from the breech end of the barrel and inserting my custom breech plug.

Lock:

The lock used here is the John Bailes lock manufactured by L&R and sold by 'Track of the Wolf'. The lock was modified by milling the bolster on the lock plate into a rectangle to fit the slot on the side of the receiver.

Receiver:

This receiver was fabricated from a block of 4140 steel, which was subsequently hardened by heating to the proper temperature and then air cooling the top while placing the keel on wet newspapers. If the piece is dunked, it will warp. After hardening, it was reheated to 550 degrees for tempering. It might be possible to use high-strength (7075) aluminum, which would be lighter and much easier to machine.

Barrel retention:

The barrel is retained by two 10-32 screws and a 3/8" retaining/positioning pin. The pin is made from hardened and blue-tempered 4140 steel and must be long enough to exactly fit the gap formed between the bottoms of the slot and hole in the receiver and barrel. If not an exact fit, it is susceptible to being upset and allowing the barrel to move out of position when fired. Also make absolutely sure the 10-32 screws holding the barrel down do not bottom out in the barrel before pulling it tight to the receiver. It is also very important to use a material such as the #2 Permatex to seal the space between the barrel and receiver. This material can flow enough to allow barrel positioning, but acts as if it were solid if you try to move it quickly; thus, during firing, it acts as a strong solid bond.

Cam and breech plug:

The cam and breech plug are machined from 4140 and must be hardened and tempered to a light blue to give good hardness; the cam-breech mechanism is the most heavily stressed during firing.

Fitting:

Before the barrel is placed, the cam and breech must be fitted so that the cam lever is under slight tension as the eccentric contacts the bottom of the slot in the breech plug, before the lever meets the catch. Then, the barrel adjusting screw is tightened until the breech contacts the barrel when the lever is about 1" from the catch. This will put the required force on the breech when the catch is closed. Again, make sure the retention screws are not bottomed out in their holes, and add the Permatex before attempting to proof-test it.