

Suggestion III

This method has the appearance of petals on a tulip. In this system a series of metal petals surrounded by a very strong spring seals the exit of gas after the projectile forces its way through the petals. The projectile should have a long gradually-tapered section starting just back of the ogive, quite similiar to a tapered heel except having a longer taper.

*Barrel
with
metal
petals*

Fig. 5
Fig. 6
Fig. 7
Fig. 8

The entire action is as follows: The petals, perhaps 8 in number, are closed tightly over the forward section of the muzzle surrounded by a strong circular spring. They must be completely tight, capable of preventing gas from leaking at a pressure of 10,000#sq". As the projectile passes past the muzzle and into the valve area the petals are forced open by the ogive of the bullet and start closing as the rear taper passes through the seals. Trapped residual gas could be allowed to escape through a valve at a later period somewhere in the barrel or by actually using the extraction of the cartridge case as a valve. It is also possible that a delayed blow back unlocking system could be designed wherein the residual gas would thrust the cartridge case rearward using the jet effect in reverse thus forcing the rifle forward. The result would be additional recoil reduction. In this case alteration to the locking mechanism