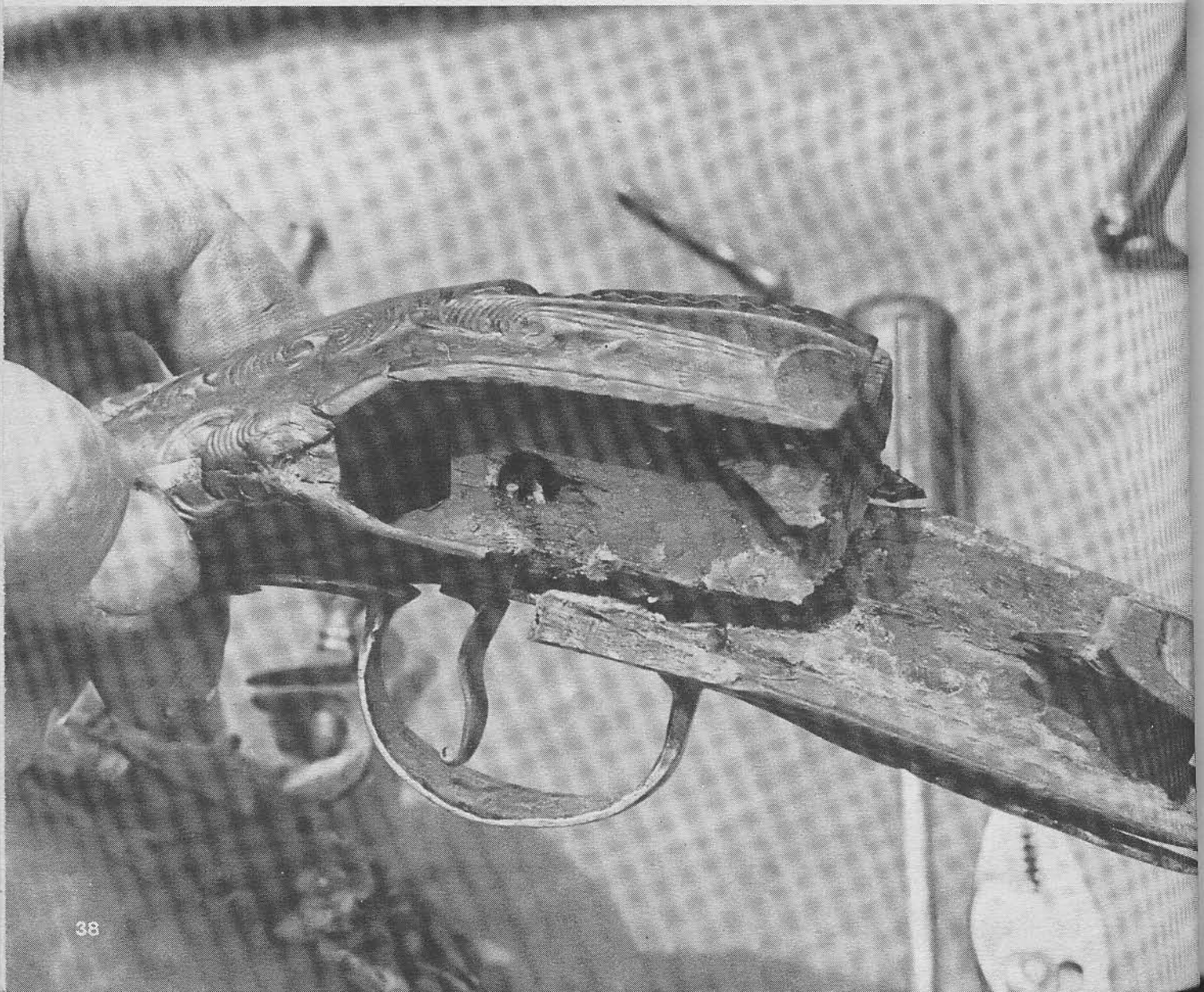
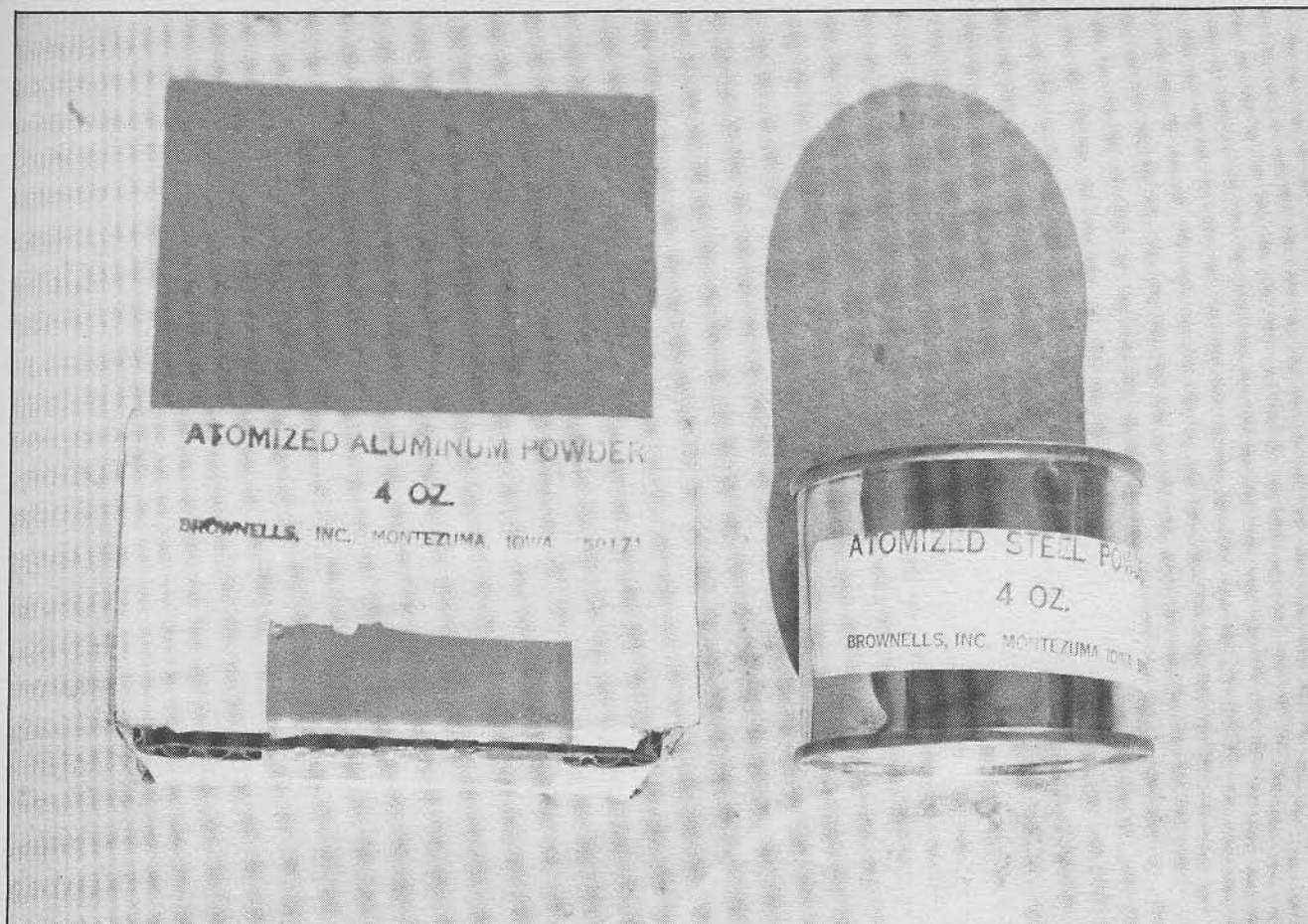


Chapter 5

EPOXIES, GLUES & FILLERS

*A Host Of New Materials Make Gunsmithing
Chores Easier And Cleaner Than They Once Were*





Left: Though in poor condition and badly cracked, the stock of this ancient flintlock can be restored with some carefully fitted inlays to replace the missing wood, then epoxied in place. This particular gun is not considered a valuable collector item, but would make an excellent gun to hang on a wall in a den for purposes of decoration. (Above) To increase the strength of certain types of epoxies, atomized aluminum or steel powder can be added.

PROFESSIONAL gunsmiths experience a continuing stream of broken, cracked, splintered, dinged, deeply scratched, dented and otherwise mutilated wood coming through the doors of their shops. This need for repair is an almost daily happening.

In past years, repairs of this type were considered a headache by the working gunsmith, because a broken or cracked stock could not be guaranteed when repaired. The animal glues then available — even with the installation of wood or metal reinforcing pins — were no assurance that the break would hold should the rifle or shotgun receive a good, sharp jolt. However, this problem has changed for the better. Today, any competent gunsmith can assure a

customer that a cracked or even broken stock, when repaired correctly, will be as good as new. In fact, if really properly done, the break probably will be the strongest part of the stock. This is due to modern technology and developments.

The introduction of so-called miracle glues, epoxies and Space Age cements has virtually revolutionized the gunsmithing industry, making what used to be tough jobs a lot easier for most of us.

There are gunsmiths who do not remember when such miracle preparations were but a dream. Relatively new to the craft, they tend to assume that these iron-strong epoxies, glues and cements have always been with us. In reality, these seemingly miracle cements have been on the scene



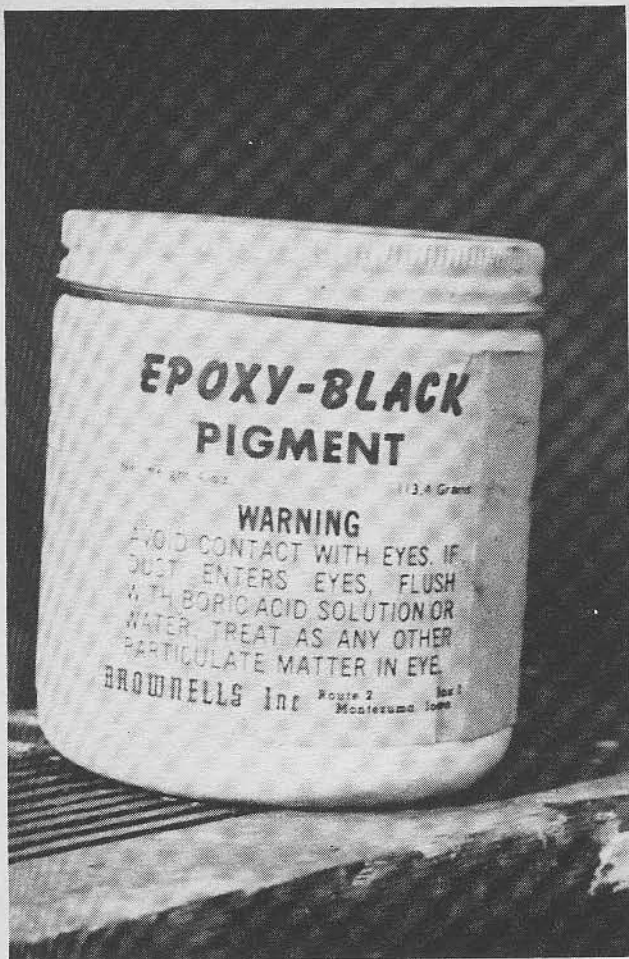
The right grip of this Marble Gamegetter had a large piece missing. It was restored, using AcraGlass Gel that was mixed with epoxy black pigment. Great care was required in the repair, but the end result made the repair invisible.

for less than thirty years. I can't recall hearing of or seeing any of these preparations that were available to the general public even in the 1950s.

The uses to which modern epoxies can be applied is limited only to the extent of our imaginations. As for myself, I have performed what to me were tasks verging on miracles. For example, there was a rare pair of hard rubber pistol grips with a large chip knocked out of one corner. With modern epoxies and a bottle of Brownell's epoxy-black pigment, I mixed up a small batch I thought sufficient for the repair. I then constructed a retaining dike around

the broken section of the grip, poured the epoxy into the area and allowed it to harden for twelve hours.

Once hardened, the epoxy was carefully dressed to the original conformation of the pistol grip. Then, just as carefully, I checkered the material to blend in with the rest of the grip. These antique pistol grips are virtually impossible to find today, so it was a matter of either leaving the grip broken as it was or attempting to replace the missing section. The epoxy, colored with the black pigment was a perfect match for the original hard rubber and the repair is all but invisible.



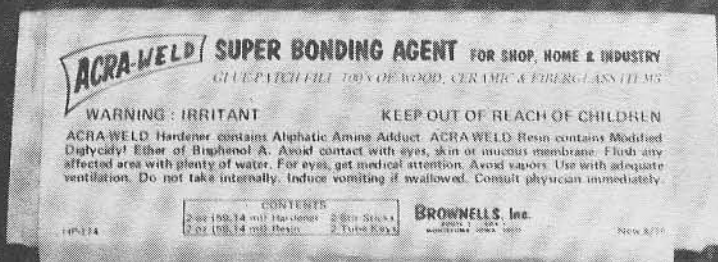
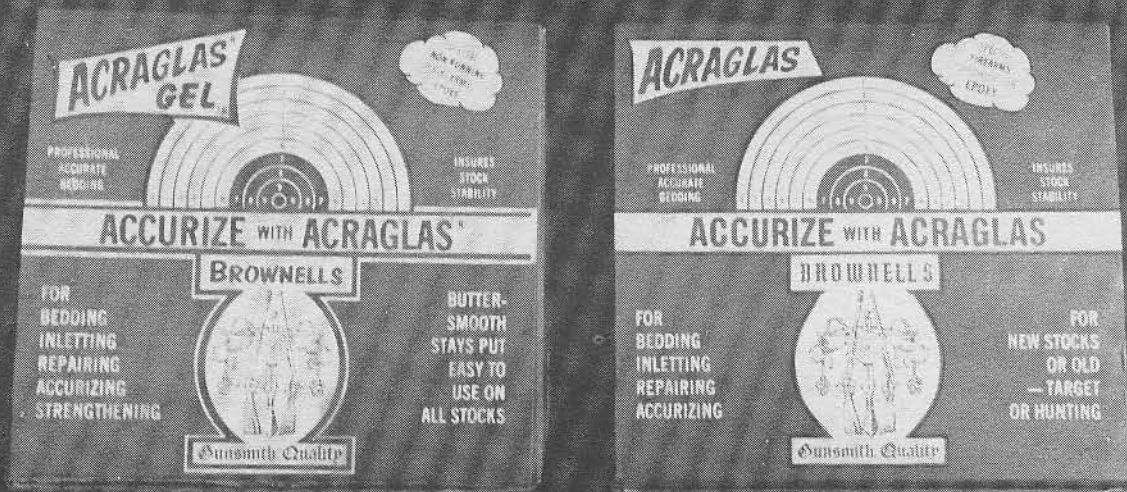
Epoxy black pigment, marketed now by Brownell's, Inc., can be mixed with epoxies in minute amounts to produce a jet black finish similar to hard rubber, but the product is stronger.

Colt SAA hard rubber grips of pre-World War II vintage are difficult to find and expensive. This broken grip was repaired to near original shape.

These epoxies and miracle cements are used regularly by gunsmiths to install barrel liners, repair broken or badly cracked stocks and for bedding new barreled actions into rifle stocks.

Probably the best known epoxies for gun work are those supplied by Brownell's of Montezuma, Iowa. The first of these — and possibly the best known — is AcraGlas stock bedding compound. This product has been highly praised by gunsmiths over the years of its existence and is probably today's most extensively used stock bedding compound. Like many epoxies, AcraGlas is absolutely acid and water-proof, it will not rot or deteriorate as will some so-called plastic glasses. It is highly resistant to impact, will not

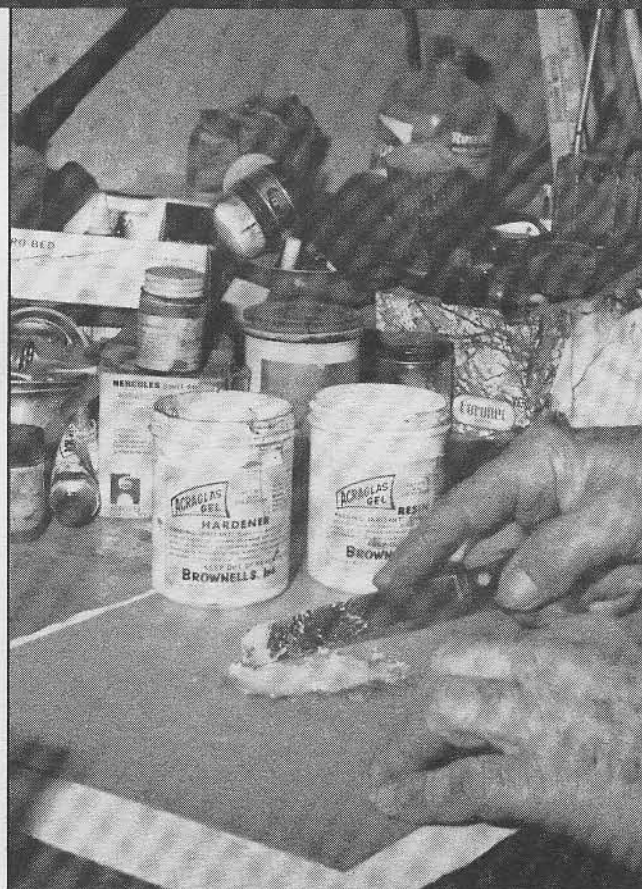


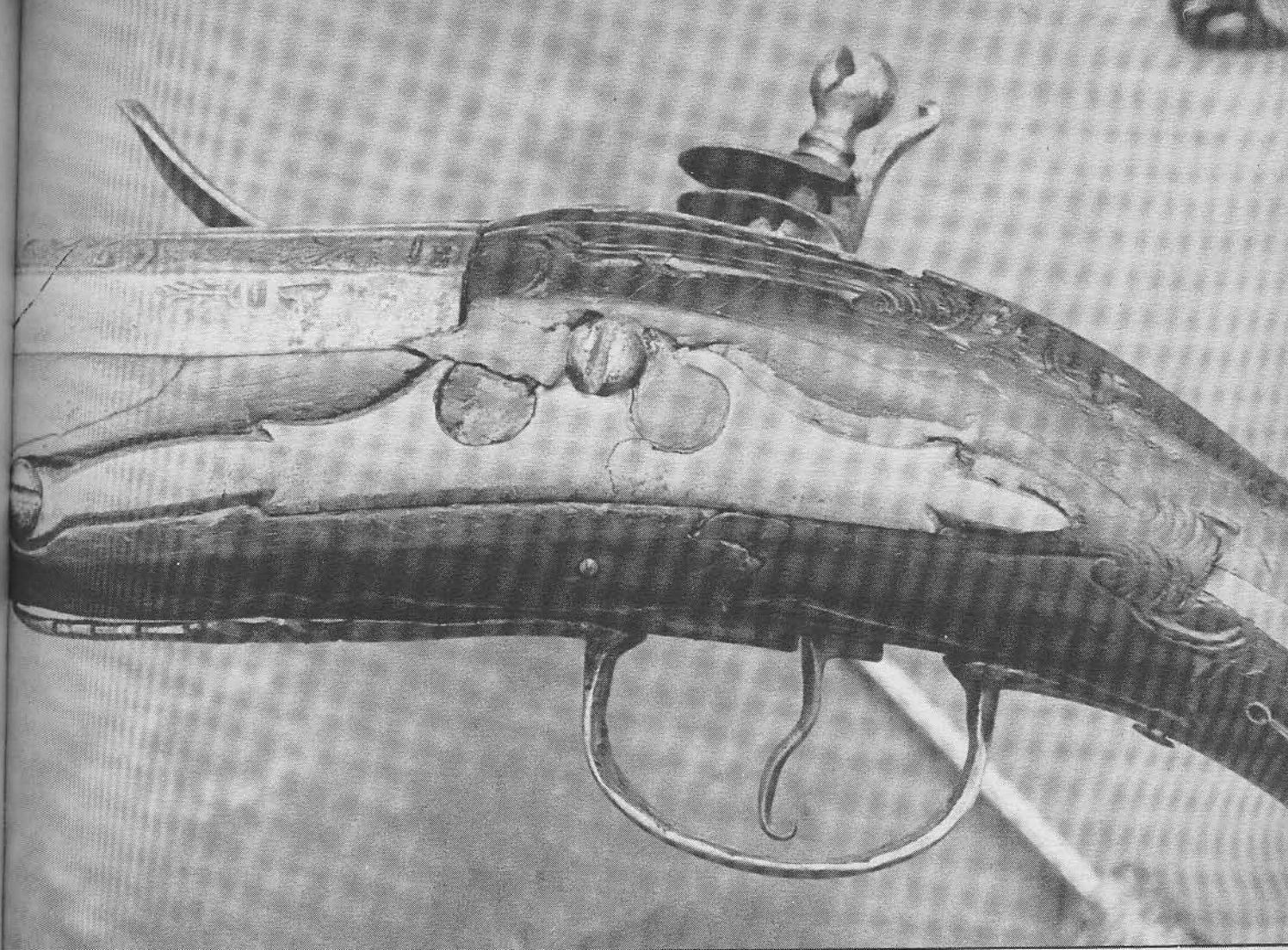


Author feels that AcraGlas Gel and AcraGlas are without equal, when it comes to repairing or bedding gun stocks. He feels AcraWeld is outstanding for badly cracked stocks. (Right) Most epoxies must be mixed on a one-to-one basis — equal parts of the two substances — and should be mixed thoroughly to assure proper bond in mending jobs.

dent, is easily repaired, has a shrinkage factor of less than one percent and will bond permanently to any wood or metal if a releasing agent is not used. It hardens by chemical action only.

A companion to AcraGlas is AcraGlas Gel. Also a product of Brownell's, this newer version has a nylon-epoxy base. It may be mixed with atomized aluminum or steel dust for true super strength and holding power. This product is the result of the latest in technological research and has a shrinkage of only one-tenth of one percent, amazing in itself.





Bad cracks and gouges such as those on this 18th Century flintlock pistol can be repaired with epoxies. If the job is done correctly, Bish declares, the repaired area may well prove to be the strongest part of the entire gun stock.

When a cracked or broken rifle stock is repaired properly with this product, one may rest assured that this repair is the strongest part of the stock. The original break will never break again! AcraGlas Gel is easily mixed one-for-one — equal parts from each of the two containers — and has a butter-smooth consistency which will not run or drip from the area where applied.

Yet another superlative Brownell's product is Acra-Weld. If you want something glued permanently, Acra-Weld is the answer. However, never allow it to touch

anything you don't want cemented, because it will adhere permanently to whatever it touches. You would look a bit odd with your finger permanently affixed to your ear!

In the past I have used both AcraGlas and Acra-Weld for stock cracks and breaks, but now favor Acra-Weld exclusively for these chores. It has a longer set-up time — about twelve hours — but is more versatile in that it may be used on metal, wood, concrete, ceramics, glass and I even used it to repair several small leaks in my fishing boat successfully and permanently.

Such preparations also are a godsend for antique arms restoration. In many cases, the wood of four-hundred-year-old arms has become quite pulpy and is fragile to handle. On the verge of disintegration as it is, this wood can be given new life by carefully applying a coating of any of the mentioned epoxies to the surface. When the epoxy has hardened, the wood usually can be restored to its original contours. Missing or chipped sections of wood can be replaced by carefully shaping a new piece of the proper type wood to fit the void, then epoxying it into place. Properly done, a repair such as this is virtually undetectable even to the practiced eye.

Years ago, one of the most often used adhesives for wood repair was simple rosin. When melted, rosin becomes fluid and may be poured or smoothed onto any wood surface to fill gouges or dents. When cool, the rosin will solidify and thus could be sanded and shaped. A final coating of varnish would bind the rosin repair in place. Rosin also was used for several centuries by the cutlers of

Sheffield, England. Its use was limited largely to attaching knife handles to the blades of so-called Bowie-type knives as well as table and carving knives. Since the advent of modern epoxies, the use of natural rosins has been largely curtailed.

What are termed fillers are used for repairing deep scratches and dents in gun stocks. The old standby is known as a shellac stick. Available in a wide variety of colors, shellac from these sticks is applied to the dented or gouged area with a small spatula in a quick, sweeping motion after a portion of the stick has been melted by heat. Application of this product is a matter of experimentation to attain the correct color. It is not recommended for the rank amateur until there has been a lot of practice in its proper use.

Then there are the quick-dry cements that set up hard in a matter of seconds. These so-called miracle products were developed in recent years for medical use after it was found the cement would adhere to human flesh and stick it

The handle of this rare Marble #2 safety pocket ax was broken away for about half its length. Careful application of AcraGlas Gel, mixed with epoxy black pigment, resulted in restoration. The original handle was of hard rubber.





Above: Shellac sticks are available in a variety of colors. Properly used, these sticks can be used to make invisible repairs on dents, scratches, gouges and even deep tool marks in gun stocks or pistol grips. (Below) Micro-bed is another of the epoxy-based compounds that Bish has found satisfactory for rifle bedding and general stock repair.

together tight! I can attest to this claim. On several occasions, when I first used the material, I had several fingers seemingly bonded together permanently! Not even lacquer thinner would affect it, but a good soaking in hot water and scrubbing with Lava soap finally broke the stuff loose.

While not particularly suited to gunsmithing projects, these quick-set cements do have their place in the field. I never think of going hunting or fishing without a small bottle of this quick-setting material. It's great for quick repairs to a fishing rod and a small single drop will tighten up a loose sight or scope mount in a matter of seconds. It also is great for securing a knot on a lure or fly you have just tied to your fishing line. It's a quick way of mending something temporarily, but it is not necessarily permanent.

Amateur and professional gun craftsmen alike will be using literally gallons of the aforementioned epoxies, until scientists come up with something even better. Until that time comes, epoxies are the great time-savers and headache preventatives in the field of gun crafting.

