

# SHOP TALK

By Bruce Daniels

Since horses feet vary in size from horse to horse and even from right to left horseshoers have to find quick ways to mark and cut steel. I feel that every mechanical method of shearing iron has been worked out by craftsmen before us, there isn't much left to invent, mechanically. It is commendable to study our problems and rediscover the techniques used by our forefathers, but it is quicker to look back into our trade history either by reading old books or by picking the brains of the older craftsmen. The real shame of it is that so much has been learned and not recorded. In the days of thorough, long lasting apprenticeships, it was not necessary to write down each technique or describe each tool. The current resurgence of interest in blacksmithing may terminate with a better record of our trade.

For years I had a shear in the shop and carried a thick chisel hardie on the truck to cut bar stock in lengths. Then one day I figured out that if I put the bar stock in my vise and put a long handled adjustable wrench on the bar stock next to the vise and rotated the wrench I could twist the stock off rather simply. (*Illus. No. 1*). With a 12" wrench and a solid vise I can twist 5/16 x 3/4 rather easily. It was almost ten years before I walked into a shop in Vermont and saw someone else using "my" technique. All I had come up with was another rediscovery. I figured out the only logical solution to a common problem. Now, I know that there are blacksmiths and horseshoers throughout the world who have the *same* secrets.

One improvement I made on the vise and wrench system was to make what looks like a split hardie and a counterpart with 30" handle out of a 3/8" truck leaf

spring. (*Illus. No. 2*) I call this tool my "Tail Twister" and for awhile I considered patenting it. But the market being small and my production capabilities being limited I decided to just give the idea away. After all, probably like the wrench and vise I'd find out half the world has been using my discovery for years. I can cut up to 1/4" x 1" with my Tail Twister and I can imagine if it were made heavier it would take larger stock. *Illustration No. 3* shows the Tail Twister twisting 1/4" x 3/4". It is what I call a total leverage shear. That is it is not a 10 to 1 or even a 50 to 1, it is a 30" to nothing leverage ratio. It shears to the center of the stock. (*Illus. No. 4*).

Making the Tail Twister requires skill and putting a temper in it is tricky. I did it with a torch, heating the cutting edges only to a yellow orange and quenching in oil.

A much simpler tool for cutting steel is a small 3/4" triangle about 2" long made of hardened steel called a "devil". By driving a piece of steel on it to a depth of about one third the thickness from two sides, you can snap it in half. (*Illus. No. 5*) The devil will work comfortably up to 3/8" stock. After that a torch or heavy shear is about your only help. You can purchase a devil from most horseshoe supply stores but they are all so flat, long and hard that if you get a piece of scale under it or have an uneven anvil face and try to cut steel; your devil will become two short devils. When I used to buy devils I would grind one flat side slightly round from one end to the other. This precaution gave me almost twice the life out of one devil.

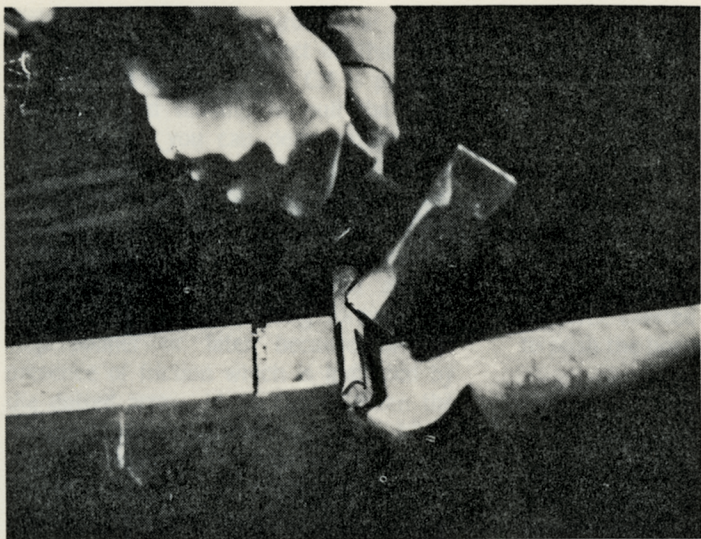
I was pleased, at that time, if I got six months out of one. Then one day I decided to make a devil that *would* last. That was

two and a half years ago, I did make one, it is still in one piece, it is sharp and I am still using it.

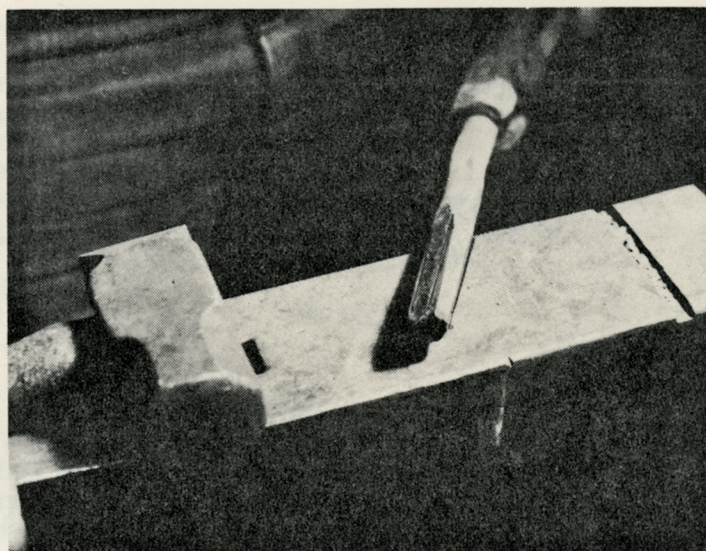
To make a devil find a 3/4" automobile coil spring and burn six or seven inches off. Straighten it out being careful not to get it beyond high orange heat or it will burn on you. Start straightening it out on the anvil horn first. (*Illus. No. 6*) and then up on the anvil face. Remember you are straightening it out, not flattening it. A piece of steel like this should be held in bolt tongs but if you don't have a pair, simply weld a piece of bar stock on the end for a handle.

Now make a triangle out of the stock by placing it in the corner of the chipping face, (that's where the horn and the face meet) first from the near side of the anvil (*Illus. No. 7*) and then from the off side. Use at least a four pound hammer. That way you can get power and accuracy. Keep the same side of the devil down both times. After a few times back and forth you will get a sharp edge (*Illus. No. 8*). The end will probably be a little ragged by now so trim it off on a hardie (*Illus. No. 9*). Your half round hardie will probably do a classier job. When you make the cut keep your hammer on the devil side of the hardie. That is to say cut the devil off the end, not the end off the devil. If you don't, the ends will bevel up and the bottom will be round as a ball. But, don't cut the devil all the way off. Let it hang on by a sixteenth of an inch or so (*Illus. No. 11*). The next step is to harden the devil by heating it up to a good orange and submerging it in some old crankcase oil. After that you snap it off and the only thing left to do is to grind the sharp edges off and enjoy not having to buy another devil for at least two and a half years.

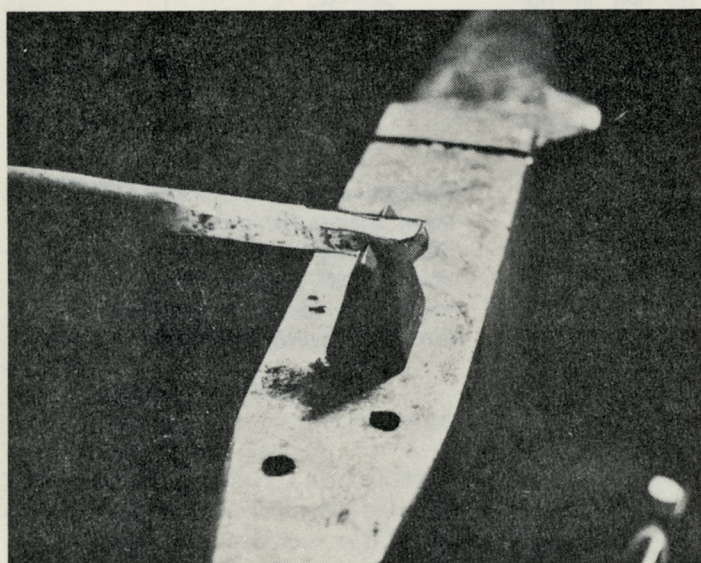




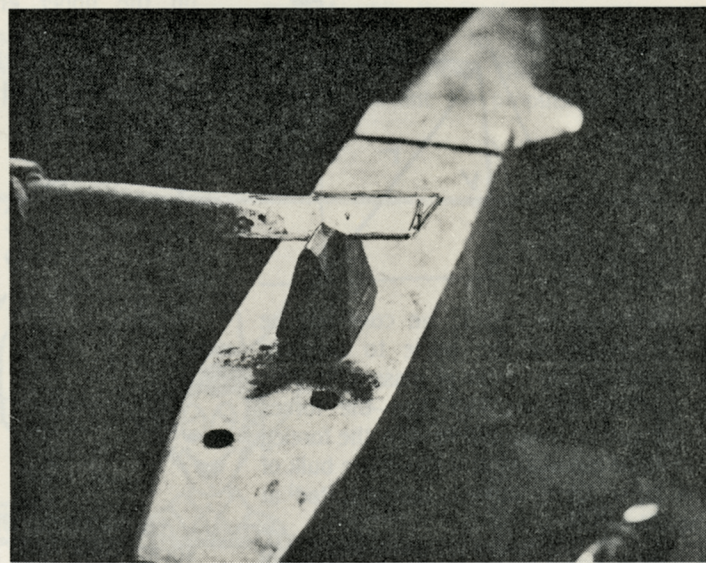
**No. 7.** A heavier hammer with a short stroke is more accurate than a light hammer with a long stroke. The chipping face area keeps the stock straight and stationary.



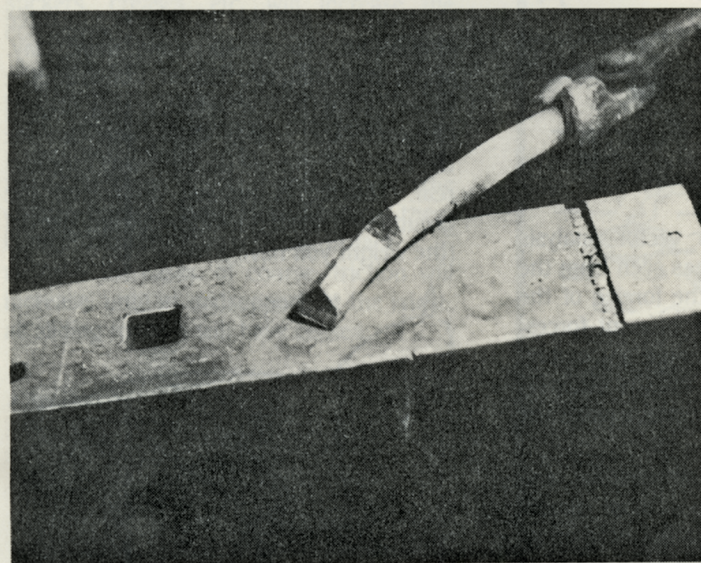
**No. 8.** Keep at it until the top gets a sharp edge.



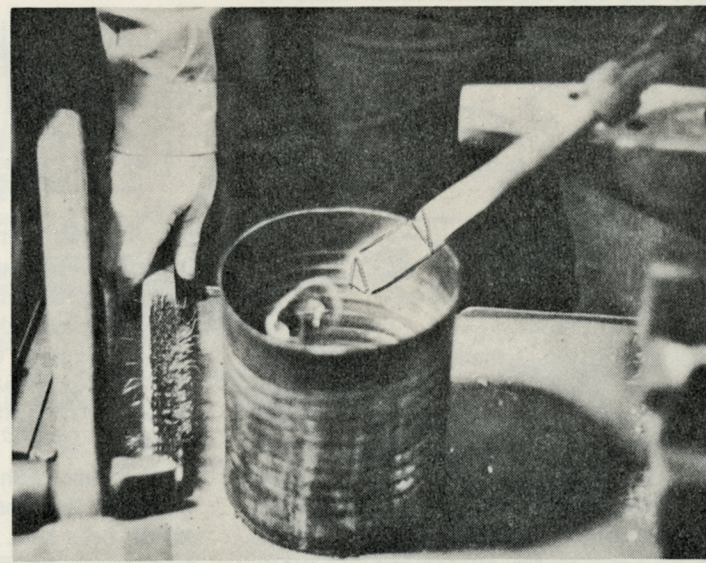
**No. 9.** Strike mostly on the stock side to keep the end from curling down.



**No. 10.** Make your devil about an inch and three quarters long.

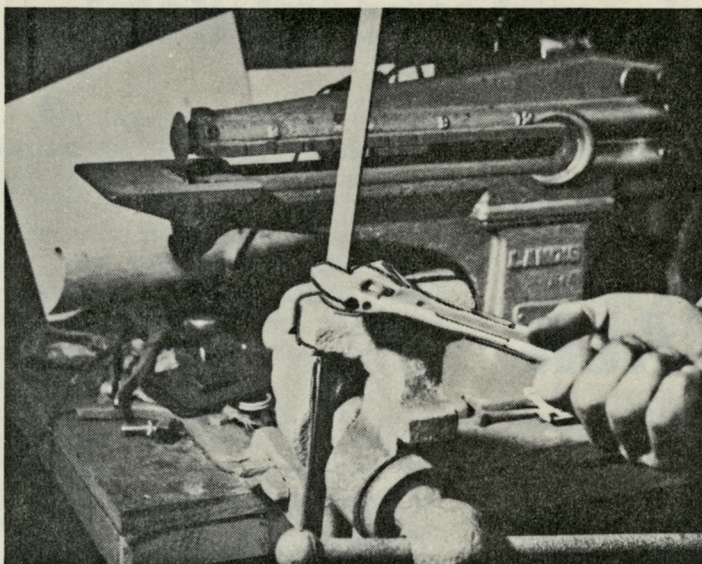


**No. 11.** Don't cut the devil all the way off or you will lose it in the fire.

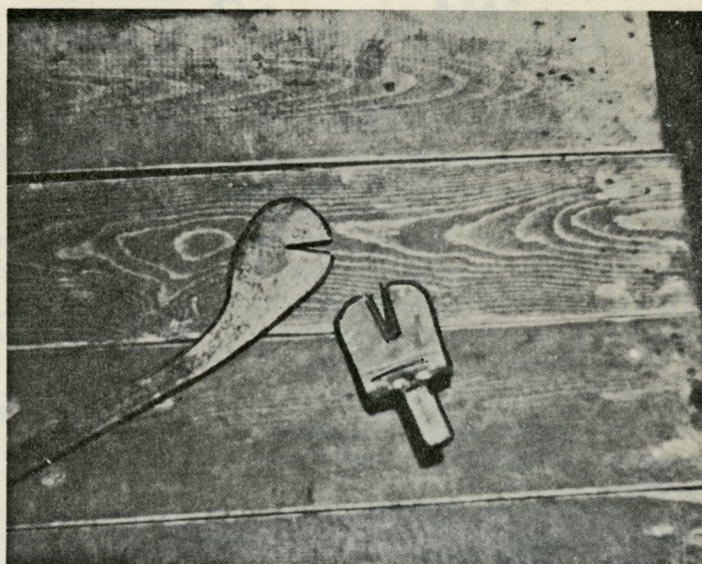


**No. 12.** To harden the devil slowly heat to a bright orange color and submerge it in crankcase oil.

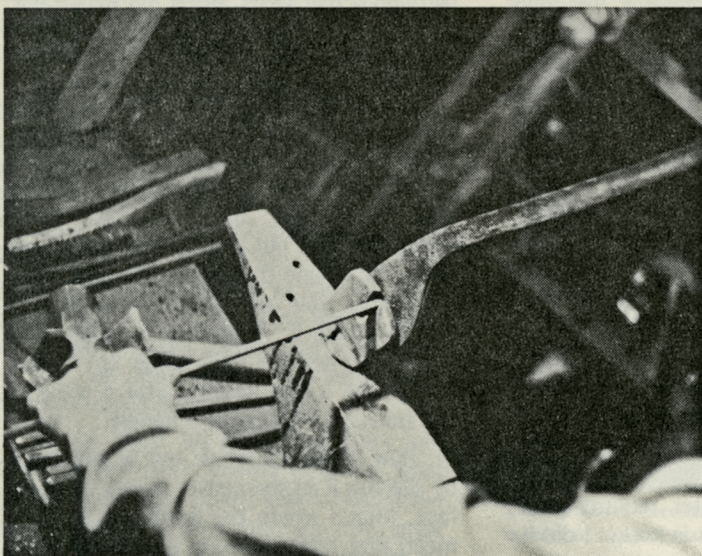




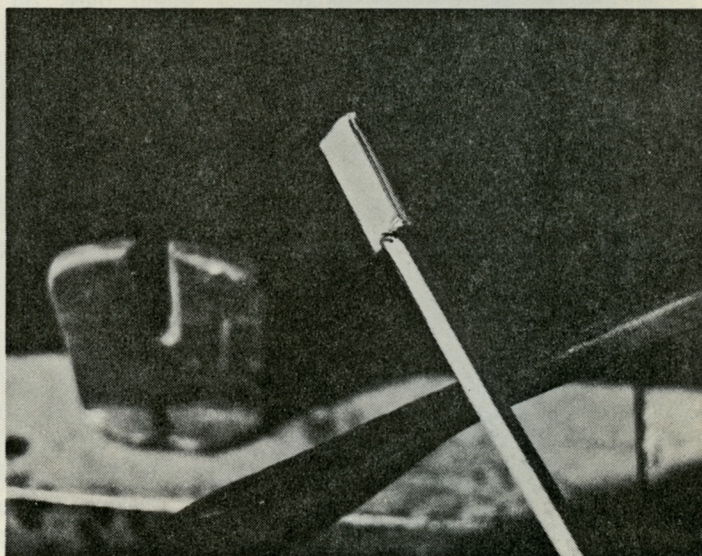
**No. 1.** Twisting bar stock in half with the vise and wrench method.



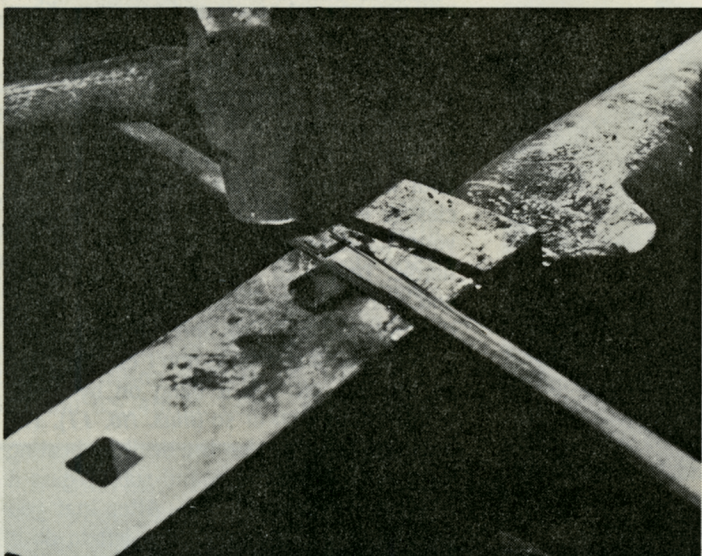
**No. 2.** The Daniels Tail Twister.



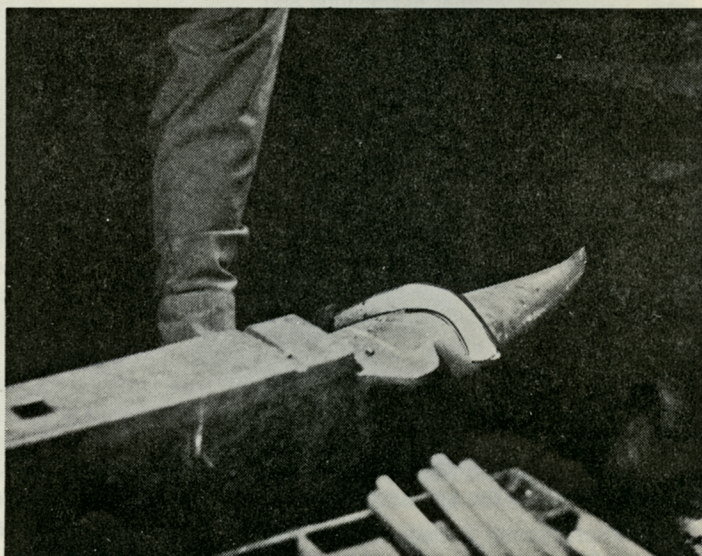
**No. 3.** The Tail Twister in use. The horn of the anvil held on your right leg forms the other arm of the shear.



**No. 4.** The stock is not sheared to one end but to the center.



**No. 5.** To use the devil, drive the stock one third it's thickness from each side and bend it until it snaps.



**No. 6.** Starting on the anvil horn keeps the spring from getting scarred. Always make a "bridge" when straightening out stock. Remember, you are just straightening the spring, don't flatten it.