For tempering there are several kinds of fluids, as pure water, salt water and oil. Pure water is as good as anything else for ordinary use, but salt water is often used if it is necessary to make a tool very hard. Salt water will harden steel harder than water alone, simply because it is a better conductor of heat, but very few tools need to be made harder than water will make them. Oil is better than water when it is desirable not to chill the steel too suddenly, as for instance, in tempering knives, springs, or any tools which are liable to warp out of shape in cooling.

A round faced hammer weighing about two and a half or three pounds is the proper tool to use for sharpening an ordinary plow share, if one man has to do the work alone. With such a hammer the edge of the share may be drawn out by hammering on the upper side while the lower side is kept straight by being held flat upon the anvil. For quick work in drawing out a very dull or thick share, especially when a striker is at hand to help, the share is turned bottom up and the edge drawn out by using a larger hammer or sledge.

The greatest care must be used not to burn the edge of the share while heating. In drawing out the edge of the share near the point, the point itself is very apt to be bent around too far "to land." This condition is not easy to avoid or to remedy. It will not do to rest the edge against the anvil to drive the point back, for this would dull the edge. Usually the edge is rested on a hardwood block while the point is being driven back. This accomplishes the purpose without spoiling the edge.

The welding on of new points where old ones have worn too short is a piece of work which is apt to give trouble to the inexperienced blacksmith when he tries to do it for the first time.

A new point for a share should be made of plow steel or a piece cut from an old share is good. Do not take a rasp or any steel high in carbon such will cause too much trouble in welding. The edges of the new piece should be drawn down thin. After placing it on the point of the share, this piece and the old point should be covered with borax, iron filings or any other good compound.

The welding should be done in the fire, at least the first part of it. After starting the weld in this way, it may be finished on the anvil. After the welding is finished the end is cut off to the proper shape, the edge drawn out sharp and the land side squared up. In making a weld of this kind it is necessary to heat very slowly in order that the two parts may reach the welding heat at the same time. Quick heating would cause the thin new point to burn before the larger part got hot enough to weld. If the new piece gets hot before the point of the share, draw it out of the fire a little so it will cool slightly. The main thing is to get both to the same heat.

To harden a plow share which is made of such soft steel that it cannot be tempered in the ordinary way heat the share to a uniform light red heat and sprinkle over the entire upper surface powdered red prussiate of potash, which will melt and flow over the surface of the steel. It should then be plunged into cold water or brine. This will not harden the share very hard. But in use in land containing no solid stones, it is usually safe to harden the plow share quite hard, providing the shares are made of good steel. This may be done by simply heating to a full red color and plunging into water or brine. It is best to plunge the share in, thick side first, because this will give it a better temper.

Time does not permit me going into detail with other numerous practical things that can be done in a farm shop. At the Agricultural School a course may be taken which includes this kind of iron work, and it goes without saying that such work affords a very useful training for the "Young Farmer."