

The Hand Drill

A T A L E O F R E J U V E N A T I O N

This drill, given to me by my father, belonged to my grandfather. It has no brand markings on it. It is likely an inexpensive version of the renowned Miller's Falls or Goodell-Pratt hand drills. Still, its sturdy construction and essential good character made it a suitable choice to refurbish. The goal was to restore, and even improve on, the original design and end up with a hand drill that looked like an antique, but would be a good and valuable, everyday working tool. The result, a hand drill that has a sturdy feel, smooth action and perhaps another century of useful service.



The removable top was stripped, repaired and re-stained in *cabernet*, then finished with acrylic

A rubber washer was added for two reasons. To absorb some of the pressure from over tightening the top and to provide a visual break between the parts that don't align perfectly.

The handle, which doubles as bit storage, was stripped and sealed with acrylic.

The handle's connection to the cast iron body was improved by cutting a notch in the insert, reinstalling the metal collar and then driving a wedge into the notch in the same manner that an ax head is made tight. The assembly was then secured with a copper wire acting as a rivet

The body was stripped, cleaned, primed and painted gloss black.

The crank knob was suffering badly from wear caused by the lack of a shaft for it to ride on. This was remedied by tapping the hole in the crank arm for a #10, fine thread screw and drilling out the knob to accommodate a nylon bushing on either end. The position is retained by a stainless steel nut.

Replacing the un-threaded center shaft required progressive drilling until it could be driven out. It was re-bored and replaced by a 5/16th inch, partially threaded, 3-inch socket head screw. This enables adjustment of the main gear; a big improvement.

The threaded portion then provides a sturdy mount for the opposing handle. The handle was drilled out to accommodate a brass threaded insert and the handle further drilled to gain added strength from the remainder of the machine screw. The tightened handle also secures the new shaft in place, but to make sure it does not drift, a new hole was tapped in the center bearing and a set screw installed.

The main gear was often painted bright red as was this one originally, but a red *anodized* paint over the dark steel produced a rich burgundy color closely resembling that of the handles and knob.

The crank arm was removed, polished and sealed with acrylic. Its retaining screw re-tapped to take a #10, stainless steel socket head screw.

The drive gear was secured only by a pin. These holes were tapped and opposing set screws installed.

The chuck needed only polishing and lubrication.

