**Procedure for Re-Tipping Roller (Rock) Bits**

**Stoody Alloy Recommended:**
Acetylene Tube Borium "H"

**Coverage:**
One pound of Stoody Tube Borium “H” covers 9 to 10 square inches with a depth of 1/4". (Tube Borium “H” is available in tubes containing varying proportions of Borium. See your dealer.)

**Remarks:**
Service life more than justifies the modest cost of rebuilding.

**Procedure:**

**PREPARATION:** Submerge bit to be re-tipped in a suitable commercial cleaner or water in order to wash dirt off bit and out of bearings. Allow it to remain long enough to get thoroughly clean, then wire brush teeth to be rebuilt. Bearings should turn freely before retipping is started. If rollers are frozen they can be freed by sharply tapping the side of a tooth using copper hammer. Use a suitable jig so that bit may be suspended in water, to a level just below the tooth being worked on and well above the bearings. (Figure 1)

**APPLICATION:** Using the torch, heat tooth stub and blow off any surface scale present. After the worn tooth has reached a temperature at which it begins to sweat, the torch is played primarily on the hardfacing rod, melting it off as needed to build up worn tooth – the process is essentially a sweat-on rather than a simple welding job. With tooth in level position, apply Tube Borium “H” to the length of the tooth. Build up sufficiently in multiple passes to roughly form the desired tooth size. (Figure 3) Avoid overheating the base metal. Each tooth is built up and shaped before progressing to the next tooth. Buildup is flame shaped by applying heat to the sides and ends of the tooth and washing down the deposit smoothly. Leave a sharp cutting edge on the tooth. (Figure 4) The hard metal washed down the sides helps to bond the new tooth to the base metal and thus strengthens the tooth itself. Care should be exercised to avoid overheating the roughly shaped tooth, as excessive heat will make the deposit too fluid and result in a blunt cutting edge. During the shaping operation the rod, if held against the torch at the bend in the tip, is a valuable steadying aid.

**FINISH:** No finish necessary.
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Fixture used for suspending bit at proper level in water while it is being welded.

Rock bit being built up with Stoody Tube Borium “H”; notice sharpness of completed teeth.

Extent of wear on tooth being worked is easily seen in the above photograph.

Built up tooth being sharpened by washing down Tube Borium “H” deposit with the flame.

Completed tooth can be seen at top of cutter on the left.

Rock bit on the left has been retipped with Stoody Tube Borium “H”. Bit on right is shown as worn.