

IMPROVED INSERT WELD REPAIR

ABSTRACT OF THE DISCLOSURE

[0054]

The invention is a method of repairing an aperture and adjacent defect in a part which is started by removing one or more defects adjacent an aperture in a base material. The material is removed to create a weld seam that extends past an area of high stress concentration on the aperture. An insert of material containing a profile that corresponds to the profile of the base material removed adjacent the aperture and a combination top and runoff plate that encompasses the insert of material are provided. A backing plate is inserted underneath the combination top and runoff plate and insert such that there remains an air space between the backing plate and the combination plate which prevents the combination plate from becoming fused to the backing plate during a welding process. The insert is welded to the base material, and the backing plate is removed. Excess material is removed from the insert to obtain an aperture containing a profile essentially the same as the profile of the aperture prior to initiating the repair.

Figure 2A