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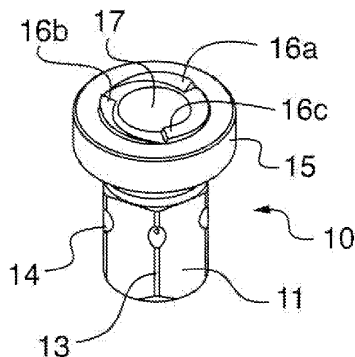
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(54) **Title:** ROTARY INSTALLATION TOOLS FOR CLINCH FASTENERS

FIG. 1



(57) **Abstract:** Tooling is held within the nose of a rotary punch and as the tool is rotated and forced against a workpiece a fastener within the tool becomes affixed to the workpiece. The tools have displacers which non-destructively deform and reshape the workpiece without any loss of workpiece material. The tools have various types of displacers including; tapered and arcuate displacers which act in concert to progressively act upon the workpiece; spherical displacers which may be fixed or rotatable such as caged ball bearings; and a full-circle displacer ring which wobbles as it presses against the workpiece. In the case of fixed spherical displacers, a multi-stroke method can be employed where the tool is rotated after each stroke in a group of installation strokes.

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