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(54) **REDUCING WASTE IN METAL STAMPING PROCESSES AND SYSTEMS THEREFOR**

(75) Inventors: **William R. Moore**, Barrie (CA); **Kevin P. Glenn**, Stayner (CA)

(73) Assignee: **HONDA MOTOR CO., LTD.**, Tokyo (JP)

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See application file for complete search history.

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Primary Examiner — Shelley Self
Assistant Examiner — Peter Iannuzzi
(74) *Attorney, Agent, or Firm* — Standley Law Group LLP

(57) **ABSTRACT**

Disclosed herein is a sheet metal stamping device and methods for reducing the size of a blank required for producing a stamped part therefrom than is conventionally possible. The device utilizes an intermediate clamp section with projections having clamping formations located thereon which complement clamping formations located on a first die section. The intermediate clamp section projections allow for the use of a smaller blank size as less addendum material is required to secure the blank during the stamping process. The blank is secured using the intermediate clamp section and the first die section prior to the second die section engaging the blank to stamp the part. In some embodiments, retention beads resultant from the clamping process may remain in the stamped part, that being inside a trim line. Furthermore, in some embodiments, a blank shifter may be provided to locate the blank between the die sections prior to clamping. In other embodiments, more than one complementary pair of clamping formations may be provided. Furthermore, in some embodiments a trim line cutter may be provided.

18 Claims, 19 Drawing Sheets