

PATENTS

EXTRUSION



The Director of the United States Patent and Trademark Office

Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

United States Patent

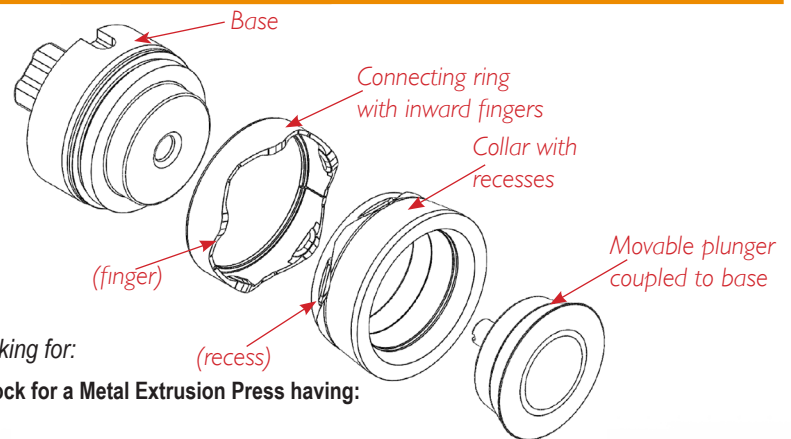
Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United State of America, and if the invention is a process, of the right to exclude other from using, offering for sale or selling throughout the United State of America, or importing into the United States of America, products made by that process, for the term set forth in 35 U.S.C. 154(a)(2) or (c)(1), subject to the payment of maintenance fees as provided by 35 U.S.C. 41(b). See the Maintenance Fee Notice on the inside of the cover.



Many of Castool products and processes are **"PATENTED"**

This outlines what to look for when identifying product or technologies that possibly overlap with CASTOOL patents.

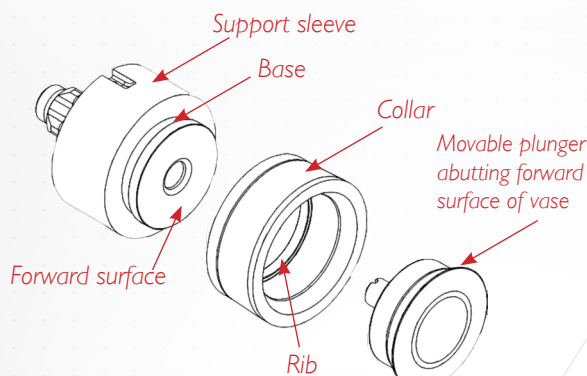
DUMMY BLOCKS



What we are looking for:

ANY Dummy Block for a Metal Extrusion Press having:

- ☒ Base
- ☒ Collar having inner outer recesses
- ☒ Moveable plunger coupled to base
- ☒ Connection ring coupling collar to base, with inward fingers engaging recesses on collar



What we are looking for:

ANY Dummy Block for a Metal Extrusion Press having:

- ☒ Base having forward surface
- ☒ Collar having inner rib couple to base
- ☒ Support sleeve mounted to base and abutting collar
- ☒ Moveable plunger abutting forward surface of base

CASTOOL™ TOOLING SYSTEMS

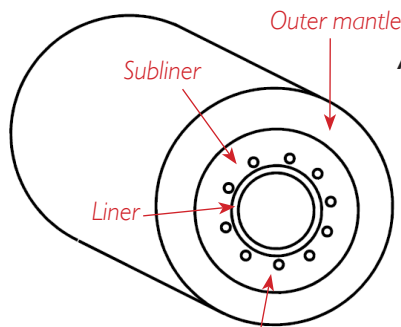
SOME OF EXTRUSION PATENTS

CONTAINERS

QR CONTAINER

ANY Metal Extrusion Press Container having:

- ✓ Outer mantle
- ✓ Subliner
- ✓ Liner accommodated inside of subliner and having passage for receiving billet; and
- ✓ Longitudinal heating elements in subliner in close proximity to liner

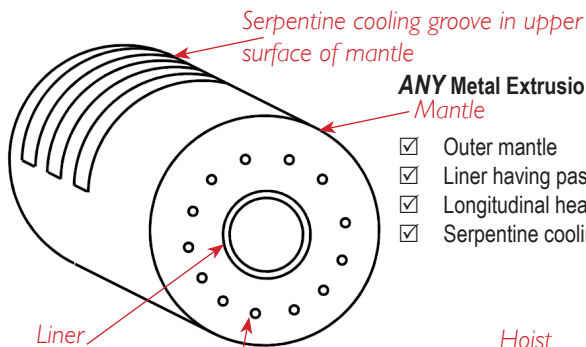


Longitudinal heating elements in subliner "in close proximity" to liner

AIR-COOLED CONTAINER

ANY Metal Extrusion Press Container having:

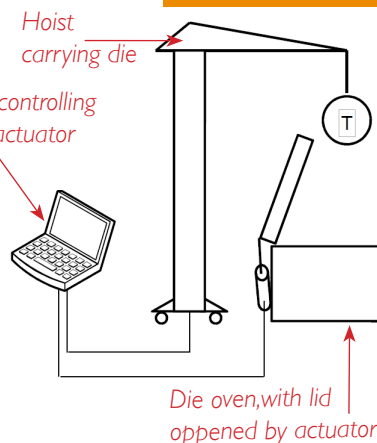
- ✓ Outer mantle
- ✓ Liner having passage for receiving billet
- ✓ Longitudinal heating elements in mantle
- ✓ Serpentine cooling groove in upper surface of mantle



DIE PRE-HEATING SYSTEM

ANY Die Pre-Heating System having:

- ✓ One or more die ovens
- ✓ Robotic Hoist
- ✓ Processor for controlling
 - the hoist
 - the lid actuator of the die oven(s)

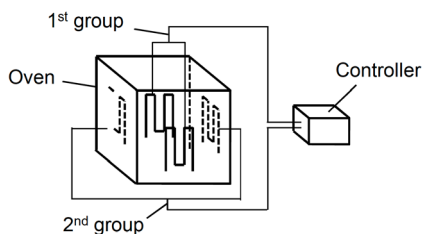


DIE OVENS

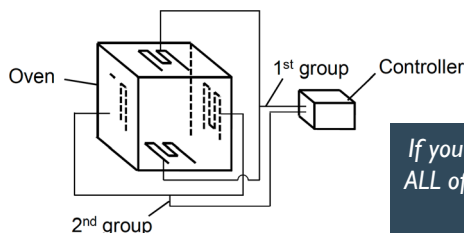
4-SIDED DIE OVEN

ANY Extrusion Die Pre-heating Device having:

- ✓ Oven, with
 - 1st group of heating elements on 1st pair opposing walls
 - 2nd group of heating elements on 2nd pair opposing walls
- ✓ Controller for operating the groups of heating elements independently

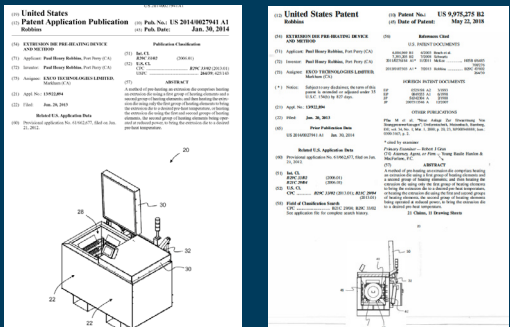
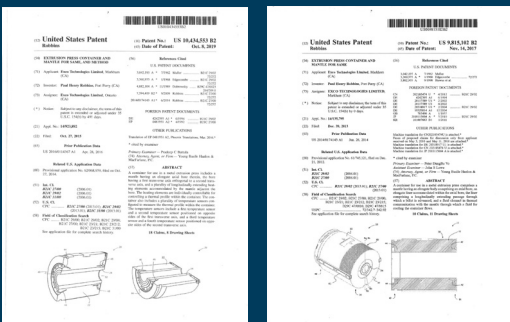
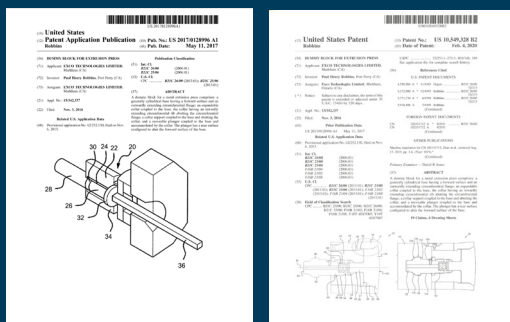
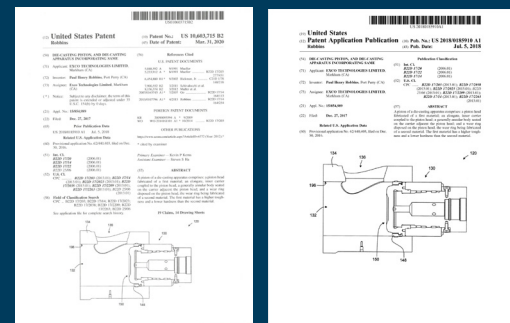


OR



If you see any product or technology that has ALL of the features identified by a checkmark, Please contact PAUL ROBBINS

If you need any more information please contact **CASTOOL**



OEC
MEMBER
ALUMINUM
EXTRUDERS
COUNCIL



sales@castool.com

+1.905.852.0121



www.castool.com

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