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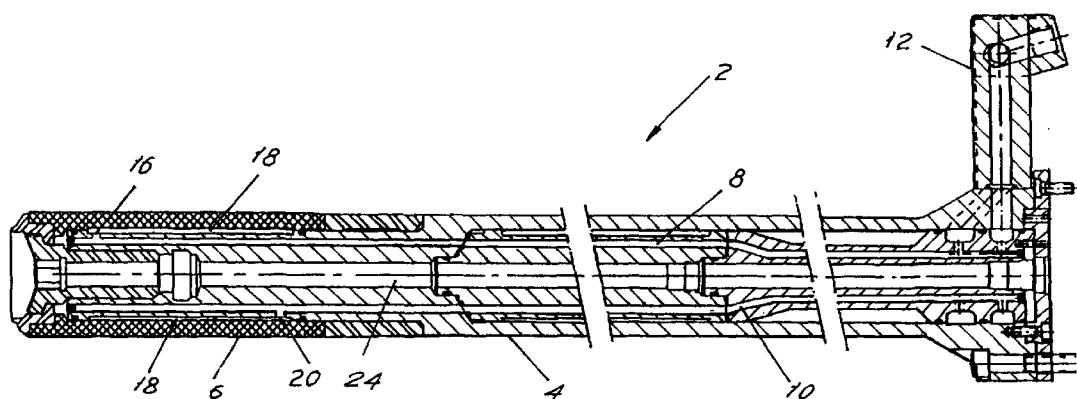
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(54) Title: INTERNALLY COOLED PUNCH



(57) Abstract: An internally cooled punch (6) disposed on the end of a ram (4) in a can forming machine. Internal fluid cooling means in the ram (4) avoids the need for externally applied cooling fluids. A plurality of parallel fluid transfer tubes (8, 10) is arranged annularly with the ram (4). Cooling medium flows through inlet tubes (8) to radial inlet ports (16) which supply the cooling medium to the inner surface of the punch (6) where the medium flows rearwardly through a channel (18) at the inner surface of the punch (6) to radial outlet ports (20) leading to outlet tubes (10) through the ram (4). Discharged cooling media flows back along the ram and out through a manifold (12). The transfer tubes (8, 10) are arranged symmetrically in an alternating array circumferentially around the ram (4) to reduce radial temperature gradients within the ram (4). A central port (24) allows air flow through the ram (4) to aid in stripping the formed container from the punch (6).



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