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(57) Abstract :
[047] The proposed invention introduces a novel tungsten-carbide tool designed to revolutionize friction stir welding (FSW) technology. This tool, featuring a rotating shoulder and cylindrical pin, exhibits exceptional hardness and wear resistance, addressing a persistent challenge in FSW - tool wear. By significantly reducing tool wear, this innovation extends tool lifespan, enhances welding efficiency, and minimizes material consumption. It has far-reaching applications across industries, including aerospace, automotive, shipbuilding, construction, and materials science, where it promotes sustainability, cost savings, and the welding of advanced materials. This invention embodies human ingenuity, driving progress towards resource-efficient, cost-effective, and environmentally conscious industrial practices.
Accompanied Drawing [FIGS. 1-2]

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