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Design and Fabrication of Scroll Saw

Mr V. Nagarajan[1], Ms M. Kowsalya[2], Ms K. Mohanambal[3], Mr R. Krishnakumar[4]
[1]*Assistant Professor,* [2, 3, 4]*2nd year Students, Department of Mechanical Engineering, Vel Tech High Tech Dr. Rangarajan Dr. Sakunthala Engineering College,Chennai-62, Tamil Nadu, India*

Abstract: ***A scroll saw is a small electric or pedal-operated saw used to cut intricate curves in wood, metal, or other materials. The fineness of its blade allows it to cut more delicately than a power jigsaw, and more easily than a hand coping saw or fretsaw. Like those tools, it is capable of creating curves with edges, by pivoting its table. The scroll saw's name derives from its traditional use in making scrollwork, sculptural ornaments which prominently featured scroll-head designs A bevel scale is located under the saw table as a convenient guide for setting the approximate saw table angle for bevel cutting. When greater precision is required, make practice cuts on scrap material and adjust the saw table as necessary. When cutting at an angle, the drop foot should also be tilted so that it is parallel to the saw table and rests flat against the work piece. To tilt the drop foot when making a bevel scroll saw cut, loosen the Phillips screw, tilt drop foot to the proper angle and then retighten screw.Blade tension knob: Check tension by the sound the blade makes when plucked like a guitar string. This method of adding tension to the blade can be developed with practice and requires knowing a better understanding of your particular scroll saw. Be careful not to adjust blade too tight.***

Keywords: Scroll Saw Blade, Stainless Steel, Wood Piece, Spring, DC Motor

I. INTRODUCTION

A scroll saw is a small electric or pedal-operated saw used to cut intricate curves in wood, metal, or other materials. The fineness of its blade allows it to cut more delicately than a power jigsaw, and more easily than a hand coping saw or fretsaw. Like those tools, it is capable of creating curves with edges,[clarification needed] by pivoting its table .The scroll saw's name derives from its traditional use in making scrollwork, sculptural ornaments which prominently featured scroll-head. Positive space is where the wood is still intact and negative space is where the wood has been removed. The bridges are the positive spaces on the wood that connect the different parts. Stick to a simple design if you are just beginning to use a scroll saw. For example, practice making a leaf or a flower first, with only a few areas of negative space. There are several types of scroll saws. The most common design is the parallel arm, in which a motor is attached near the back of the arms and the two arms always remain parallel to each other. The C-arm variant uses a solid "C" shaped arm, with the blade being mounted between the two ends of the "C". The parallel link type, used by Hawk, Excalibur, and DeWalt, has rods in the upper and lower arms that are "pushed" by the motor to move short (about 4 inches, or 100 millimetres) articulated arms which hold the blade, In this fabrication project is portable table Saw mainly used wood cutting operation, thin sheet metal, aluminum and brass. Industries are used big size and large amount of power is required. Accuracy we are used a stainless steel saw blade. Speed of the AC motor is 1440 rpm

II. LIST OF COMPONENTS

1) DC Motor
2) Scroll Saw Blade
3) Stainless Steel
4) Spring
5) Wood Piece
6) Wire
7) Switch

III. FABRICATION

Place your wood on the table. A machine saw with a table for supporting the material and a narrow vertically reciprocating blade for cutting curved lines or ornamental openwork patterns a narrow saw mounted vertically in a frame and operated with an up-and-down motion, used for cutting curved ornamental designs.

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IV. BENEFITS

1) Uses a reciprocating blade
2) Ability to cut intricate contours
3) Precise cutting machine
4) Occupies less floor space
5) More versatile,
6) Better finish
7) Can control the motion of the saw blade using a foot pedal.
8) Accurately move the work piece to cut

V. DESIGN

A scroll saw is a small electric or pedal-operated saw used to cut intricate curves in wood, metal, or other materials. It is consist of Base, DC Motor, Blade, Colum, Beam and Electrical unit.

VI. RESULT AND DISCUSSION

A scroll saw is a great tool to have in a workshop, especially if you enjoy making intricate things like furniture or wooden decorative items.

When buying a scroll saw look for the following:

1) The throat size of the saw
2) Type of blade; Pin end blade vs regular flat blade.
3) Available speed
4) Noise and vibration at various speeds.
5) Are the control knobs at easily accessible locations?
6) The maximum angle of tilt.
7) Proper dust removal.

VII. FUTURE SCOPE

1) By Increasing the RPM of the motor we can be able to move scroll saw in the cutting machine
2) The noise produced by the saw can be reduced.
3) Can cut any shape without difficulties

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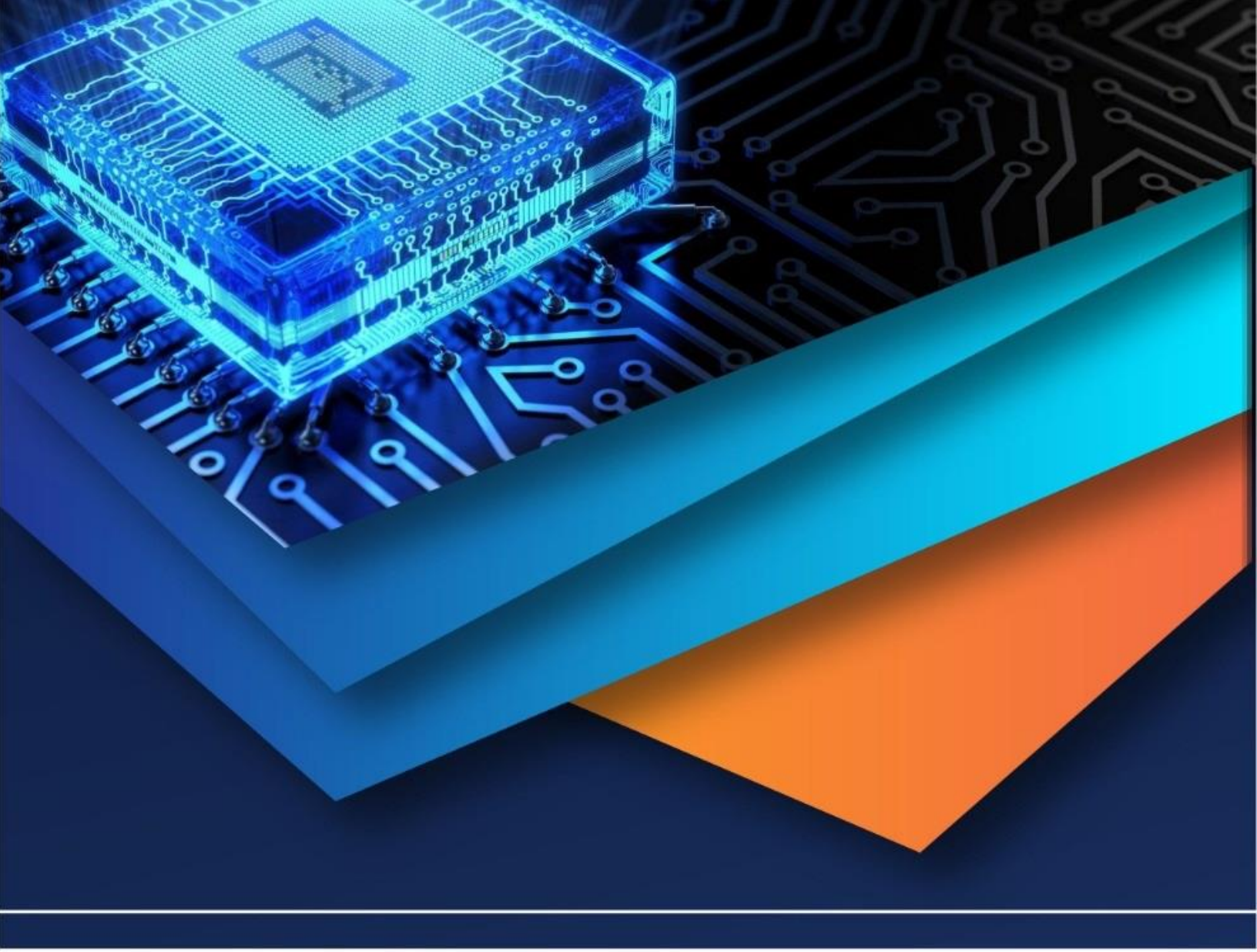

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