CHAPTER 1

INTRODUCTION

In today's industrial world man's innovative ideas has taken him towards all directions concerning about the production and safety in industrial establishments. Some instruments are of shear excellence where as others are the result of long research and persistent work, but it is not the amount of time and money spent in the invention of device or the sophistication of its operation , but its convenience, utility and operational efficiency that are important in considering the device.

Here is a device which is based on scientific principles of suspension base compress air. It is simple, inexpensive and maintenance free that is produced as a result of this project work.

Air pressure of an automobile tyre tube is an important parameter which affects the efficiency of a vehicle. For smooth and effective riding of a vehicle optimum air pressure is required. In present days, people normally make use of a stationary air compressor to pump in air to a required pressure in a vehicle tyre.

But during times of emergency, especially during journeys if the air pressure of our vehicle decreases then it poses a great problem to the rider.

In order to help during such emergencies portable equipment is required which can help the rider to easily pump air into the vehicle tyre to the required air pressure without any excess effort and power requirement.

1.1 PROBLEM DEFINITION

For every vehicle, air pressure is a major factor which affects its efficiency. When tires are not inflated to the rating recommended by manufacturers, they are less round and require more energy to begin moving and to maintain speed. As such, under-inflated tires do indeed contribute to pollution and increase fuel costs.

Optimum tyre pressures have great advantages for vehicle performance. Besides saving fuel and money and minimizing emissions, properly inflated tyres are safer and less likely to fail at high speeds. Under-inflated tyres make for longer stopping distances and will skid longer on wet surfaces. Portability of the equipments such as air compressors and other devices also pose a great problem.

1.2 OBJECTIVES

The primary objective of this project is to fabricate a very simple and portable yet an effective air pumping device which will help a common man to be self dependent. This will also substantially help in decreasing the time spent by a common man in vehicle maintenance.

Secondary objectives being:

- ✓ A very low capital investment; hence affordable for the common vehicle rider.
- ✓ This will not need an artificial power source, ensuring minimum running cost.
- ✓ Portability, which will be an added feature reducing the carrying or transportation cost.
- ✓ Simple yet effective design, surfacing another feature of the machine i.e. its remarkably low maintenance cost.

1.3 OPERATIONS

1) Cutting

2) Welding

3) Grinding