

Future Aspects of Mechanical & Electronics

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Abstract-A predefined path followed by the robot in place of a human being not only reduces cost but completely establishes a whole new range of applications. So with the combination of mechanical as well as electronics we can produce a multi-utility device. The real motive behind this was to combine and fuse different equipment and come up with a device which can solve many problems.

1 INTRODUCTION

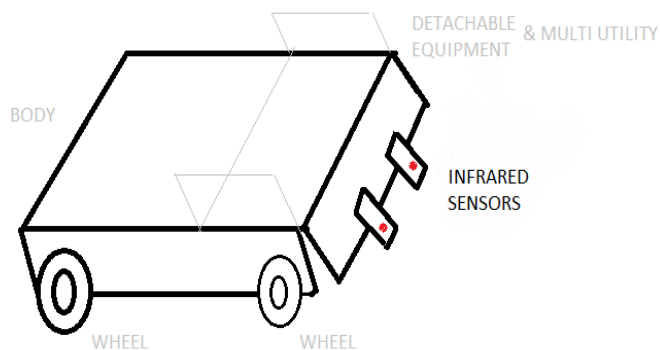
This idea came from the word fusion i.e. if we can combine the concept of mechanical and electronics together so as to develop such a device which can be used for medical as well as emergency purposes. This robot is designed continuously to follow a predefined or a new path. In order to make the robot detect these specific lines, we can employ various sensing schemes which may vary from simple low cost line sensing circuits to expensive vision systems.

The word robot was introduced to the public by Czech writer Karel Čapek in his play R.U.R. (Rossum's Universal Robots), published in 1920 and since then advancements are taking place for the betterment of the society.

Our circuit consists of an IR-LED and Photodiode arrangement for each motor which is controlled by the switching on and off of the transistor. The IR LED on getting proper biasing emits infrared light. This IR light is reflected in case of a white surface and the reflected IR light is incident on the photodiode.

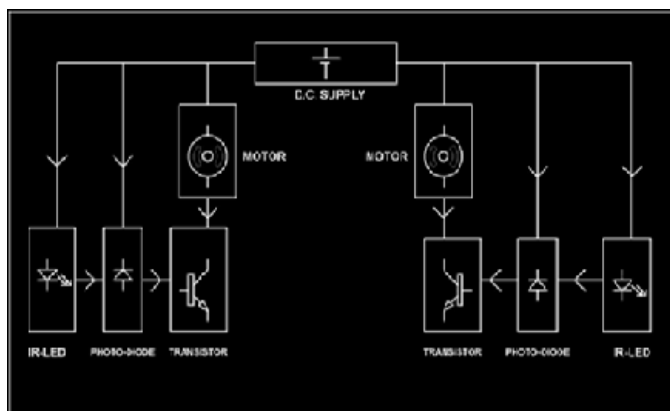
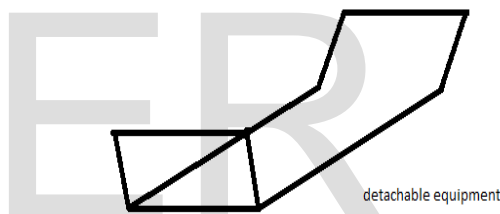
2 DESCRIPTION

The construction of the body consists of a basic chassis as shown.



3 BLOCK DIAGRAM

Now comes the part which basically is a detachable equipment consisting of multiple types of devices installed on to it. For example in places where humans cannot reach and some clarifications via photographs are needed then by installing a camera or a recorder can solve this problem. The design is quite simple as shown :



4 ADVANTAGES

- Robot movement is automatic.

- Fit and forget system.
- Good for long distance applications.
- Cost effective.

5 WHY SENSORS?

- 1.Extra high radiant power and intensity.
- 2.High reliability and low forward voltage.
3. Suitable for high pulse current operation.
- 4.Good spectral matching to Si photo detectors.
5. Peak wavelength up to 940nm.

6 CONCLUSION

The cost for cure can be reduced by using the robots in government and private hospitals. It can be very beneficial for the patients as well. Line following robot's application over electronics engineering can't be underestimated. In India many people show reluctance to get admitted in a hospital because of cost issues. The line follower robots can also be improvised by using RFID tags so that accuracy of the system increases. Robotics is very big field for the new innovation and research. We are planning to develop some small scale applications of the line follower robot such as developing the robot to detect water in a given area and used it to dry up the water, or to detect soil moisture content.

7 REFERENCES

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