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DESIGN AND FABRICATION OF BLIND SHOE USING ATMEGA328 MICRO CONTROLLER AND VIBRATION MOTOR

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ABSTRACT

According to the current situation, to replace blind stick we introduce blind shoe with the help of ATMEGA328 micro controller we introduce blind shoe which will automatically found abstract and inform to blind people by means of vibrator motor.

Key words: Blind people, closed obstacle detection, Vibration motor, sensors.

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1. INTRODUCTION

Many technologies have been used to build the devices for blind people but all has its challenging limitations which involves with its accuracy, usage and on its life span. To overcome with a current Technology is very difficult and it is a challenging task. With a overview of the past technologies we use ATMEGA328 Microcontroller for Our Blind Shoe that plays a heart of our device. We use vibrating motor to pass the signal as a message to blind person that object is nearby. The Microcontroller are operated by nickel cadmium battery. Our aim to replace the blind stick instead to place a wearable blind shoe which in less weight and compatible.

2. LITERATURE REVIEW

A device used for assistance should be easily acquired and must have easy functionalities for disables individuals [1-6].Assistive device can be portable or it can be wearable but it not heavy in weight. and but require constant interaction with body such as mobile phones.[7-10].hand free interaction[3].wearable devices makes convenient and comfortable to the blind peoples to perform the daily activities.[11-13].wearable devices can be fitted to the body as like watches or like rings.[15]

The ultra sonic sensors used will help to detect obstacle, the encodes will define the determine the relative motion, the micro controller cats like a servo motor to control and specify the directions [16].the guide cane is a reliable sysem to function e is easily and guides the appropriately the directions with less effort. [7].the disadvantages the guide device is all about its size and weight of 4 Kg approximately [18].

3. PROBLEM IDENTIFICATION

By the wide literature survey it end to the conclusion that the devices whether wearable or portable is difficult to use either by its weighty or by its mobility. Furthermore handling the devices is not up to the mark. This are problems lead by blind people while using public places and transports. [19-20]

4. BATTERY

The battery used is Nickel –Cadmium which is widely used and has a long durability and life span. Average voltage suggested at normal conditions is about 12 V

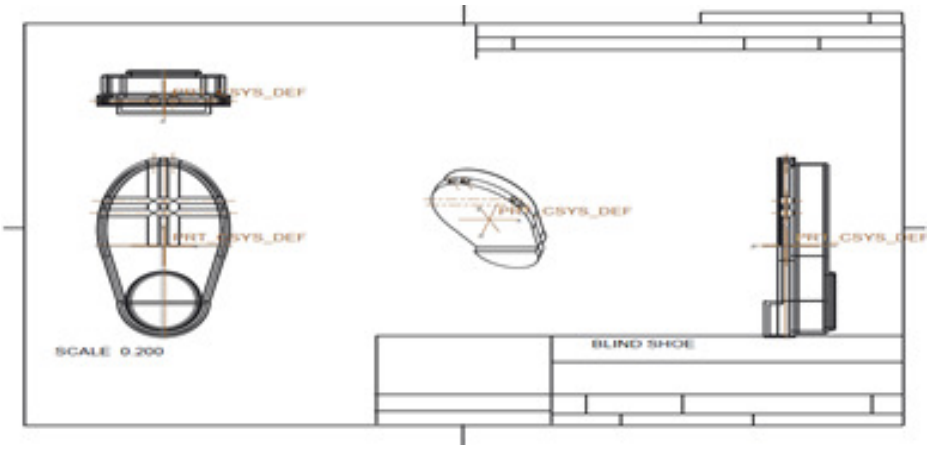
5. SELECTION OF MOTOR

- Overload protection
- Life span and maintenance
- Control complexity and cost
- Mechanical aspects like noise level ,size and weight

6. WORKING PRINCIPLE

The working of the arduino board allows ultra sonic sensor to sense the obstacles. If there is any object detected by the sensor it further allowes the motor to run which is the output .D-C motor which runs either by 3-9volt battery or using 24v DC adapter which is used to convert AC to DC and applies current to the motor

7 .DESIGN OF BLIND SHOE



7. PROGRAM - ATMEGA 328 MICEO CONTROLLER:

```
/*
ULTRASONIC ARDUINO
 Module 1
 TRIG PIN 2
 ECHO PIN 3
_____________________
 Module 2
 TRIG PIN 4
 ECHO PIN 5
_____________________
 Module 3
TRIG PIN 6
 ECHO PIN 7
_____________________
 LED1 11
 LED2 10
*/
#define DISTANCE 10// increase this value to increase the distance for sensing
#define T1 2
#define E1 3
#define T2 4
#define E2 5
#define T3 6
#define E3 7
#define LED1 11
#define LED2 10
void setup() {
Serial.begin (57600);
pinMode(T1, OUTPUT);
pinMode(E1, INPUT);
Serial.print("Module 1 :");
Serial.print(distance1);
Serial.print(" cm ");
 }
elseSerial.print("Module 1 :--- cm ");
if(distance2 < DISTANCE)
 {
Serial.print("Module 2 :");
Serial.print(distance2);
Serial.print(" cm ");
```

```
 }
elseSerial.print("Module 2 :--- cm ");
if(distance3 < DISTANCE)
 {
Serial.print("Module 3 :");
Serial.print(distance3);
Serial.println(" cm ");
 }
elseSerial.println("Module 3 :--- cm ");
 }
else
 {
digitalWrite(LED1,LOW);
digitalWrite(LED2,HIGH);
Serial.println("Out of range");
 }
delay(200);
}
longRead_Sensor_Duration(char TRIG_PIN,char ECHO_PIN)
{
digitalWrite(TRIG_PIN, LOW);
delayMicroseconds(2);
digitalWrite(TRIG_PIN, HIGH);
delayMicroseconds(10);
digitalWrite(TRIG_PIN, LOW);
return ( ( (pulseIn(ECHO_PIN, HIGH)) /2 ) / 29.1 );
```

8. CONCLUSION

BLIND SHOE plays on important role in today's mechanical field.The identified problem has seen solved nearly .this device is a easy wearable one which in less weight and in compactable in shape and in size.Furure extend is to produce different sizes of shoes that will lead and hope that difficulties in one wearable assistance can overcome.

FUTURE EXTENSION

While walking with the blind shoe we can recharge our battery by EMF (Electro Magnetic flux

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