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AUTOMATED PLATFORM BRIDGE IN RAILWAY STATION

RAHUL WANI[1], DHANANJAY GITE[2], KAUSTUBH WANI[3], AKSHAY FULSUNDAR[4]

[1,2,3,4] *Engineering students, Department of mechanical engineering, S.V.I.T. College, Nashik, Maharashtra, India*

Abstract - *The purpose of this topic is to make the smart city because current generation is mostly busy in their work and they have not time. So we planned to make the "Railway platform bridge in railway station" to reduce the human efforts. In railway station people's needs to move from one platform to other platform for that purpose, staircase is provided. In modern times escalator or lift system is also being implemented. However, this options are either a costly affair or time consuming affair. Moreover, sometimes it becomes not useful to people like aged persons, disabled persons, etc. With this project we plan to introduce a working model of automatic railway Platform Bridge, in railway station which will bridge moves forward and backward using gear and pinion arrangement. Bridge will open when track is empty or any train will not available on track and bridge will remains closed when train will arrive on track with the help of some suitable arrangement. This will help the passengers reduce the effort in going from one platform to another. The aged and disabled person can easily move across the other side. Recently, advantages for the technology is the applying using automatic bridge is move in backward by using "timer base and manual operator or sensor base and manual operators". So technical use in having railway station. When the train will pass from platform then command will be send through microcontroller to motor to pen it.*

1. INTRODUCTION

The current scenario of railway systems in India are not automated which are fully man made. In railway stations normally we use bridges for move from one platform to another platform. It is very difficult for the handicapped persons or elderly persons using this bridge or staircase, for that purpose lift and escalator is present in railway station but it is also difficult and non-convenient for edged person and also time consuming and waiting so that's why we planned the new ideas. To make it a sheltered and solid framework is a major test. Unmanageable stage intersections are one of the issue zones for the Indian Railways, and one of the significant issues of death. Disregarding different estimates taken by the Indian Railways, stage crossing passing's have kept on happening, that too often. Intersection the railroad track inside the rail route station is extremely dull and troublesome particularly for incapacitated and crippled individual. They discover it very hard to stroll over the extension for intersection the stage. To take care of this issue, we utilize another methodology called "Programmed Railway Bridge System". This can be introduced in real metro stations and stations where the separation between the station stages is expanded because of bend. The short even stage will be joined to both end of the two stages by which we can change it after and before happening to prepare by moving and sliding them on a level plane by the sensors and engine. The one part of the bar or platform is connected to first platform and second part of the bar will be moved or slide to the second platform very smoothly according to presence or absence of train. That will maintain the comfort ability of the peoples which will going to suffer from them. Now a day all over the world accidents are common because of lack of technology, human carelessness at many times. And these accidental barriers cannot be completely avoidable but some productive steps definitely reduced to some extent, in account of this the initiative steps are required to avoid many human's deaths at any place and time by introducing new technologies, this effort has been taken in this work by adopting automatic railway gate opening without gate keeper near level crossing and automated platform bridge.

2. LITERATURE REVIEW

F. Richard Yu [1] has introduced in big cities many trains are travels on tracks and speed of this trains are very fast. Sometime two trains are on same track in opposite direction or collision of train is occurred it caused accidents so that's why to avoid this types of accidents This project identifies the status of each train using IR transceivers and informs it to microcontroller after that microcontroller automatically trip the supply of train and train will stop. They have also implied the bridge over track by means easy for edged persons and disabled peoples.

Adarsh K S [2] has planned to make the mobile platform in Indian railway station mainly for physically challenged peoples. In this paper they introduced replaced the mobile platform instead of existing system to move from one station to another station in railway station. This whole system will operate through the ATmega8 microcontroller, DC Motor, Infrared (IR) sensor, voice module, light emitting diodes(LED). This framework avoids the troublesome peoples of flyovers that's why this is convenient system for humans. When the train is arrived on track then sensors sense the train entry the voice declaration caution the people to leave and don't utilize the portable Platform and the LED signal sign is utilized to show the train arriving and departure in the railway station and same way when the platform is empty then the mobile platform will open to moves the peoples.

Arun Kumar N. [3] has introduced the "Automatic Mobile platform" refers a type of system that can be used in production as well as in other industries, and particularly for railway station etc. They compared the both system current railway system and implemented system the main aim of this project is to automate railway track crossing without use staircase & announce the status of the arrival for platform users. In this system is also used to avoid train collision problems, normally manual braking system is used to avoid collision. In addition, we can have used switching of tracks and train timing adjustments which is time consuming process. Manual braking too works only if it is noticed by the train driver & sometime may cause accidents. No artificial platform to minimize the distance to travel from one platform to other. The whole process will control by programming manner for that embedded system is used. If trains come poles of the tracks are automatically interchanged, so that we can stop the train. During non-running times of tracks, the artificial platforms are allowed over the tracks. Identifies the status of each train using IR transceivers and informs it to microcontroller then microcontroller send signal to motor and motor will runs.

Acy M. Kottali [4] has introduced automatically close or open the mobile platforms in between the track trains. In current scenario the mobile platform connects the two platforms through which the passenger can walk on the platform to reach on the next platform. The main objective of this paper is to avoid accidents mainly caused by crossing the railway track to go to other platform also makes physically disabled persons to also cross the platform easier. This system can be modified as fully automated instead of climbing the staircase, this efficient method will be more compact for reaching the particular destination at exact time and also for crossing the suitable platform. The opening and closing of the mobile bridge is will operated by the microcontroller with the help of stepper motor, the microcontroller will sense the presence of train by using sensor mainly the tracking of a train is sensed by sensor, this is used for automatically close/open the mobile platform.

Muhammad Ali Mazidi [5] has introduced the system is providing horizontal automatic mobile surface platforms at the extremes of the railway station, for which the passengers (especially senior citizens, physically disabled) can cross the platform easily, in less time, avoiding the foot over bridge. It is also helpful to transfer heavy goods; this system is also providing useful information to the passengers through NFC information corners placed at various places in the railway station. The movement of Automatic mobile surface platform (AMSP) is under the controller system, which works according to the information received from the sensor placed at two different distances from the railway station. Also the manual control of AMSP is provided at the station controller in the form of switch. As an information to the passengers regarding the arrival status of train and movement status of AMSP, LED (green, white, red) and buzzer indications are provided.

Dr.P.Gomathi [6] Today the cheapest mode of transportation is railway but now no. of accident of railway are increasing due to careless railway crossing. Careless in operations and lack of knowledge of workers are main reason of this, therefore we are trying to find solution of this problem. This paper gives new smart railway track mainly for helping physically disabled and aged persons. This railway track is automatically works in railway platform. Normally two platforms are connected by mobile platforms through which passenger can walk. We placed two sensors at both sides of track. With the help of sensors, we are trying to automatic control of railway gates. When train arrive first sensor the mobile platform will be automatically close and train go through track and when train leaving second sensor the mobile platform will automatically get open. To sense the presence of train we are using microcontroller. By sensing the train on one path we are giving pulses to the stepper motor to open or close the mobile platform

3. MATERIALS AND METHODS

In this project we used the platform support, microcontroller, sensors, fiber material. We will also use the motor and gear arrangements for the movement of the bridge and also rigid support at middle of the platform. We used this automatic platform bridge technology from London bridge, this bridge will open means moves upward side when ship or boat is coming toward bridge and remains closed means at original position when ship or boat go back from bridge. and we will use the gear mechanism in this project and we used this technique from CD drive in the CPU of computer. Our project system will manual and timer based.

4. CONCLUSION

It has been observed that the tracking of train is sensed continuously, which automatically close/open the mobile platform is partially automated which is beneficial for passengers to cross the rail grade crossing. The system into a fully automated instead of climbing the staircase. This efficient method will be more compact for scheduling the train timings for reaching the particular destination and also for crossing the suitable platforms. The project will save the energy comparatively to elevator, because of this project crossing of platform will be so easy. This project prevents the level of accidents. Peoples who have factures, leg cramps, chronic foot pains and etc. they also can cross the platform easily as well as it is also helpful for the senior citizens who have problem for crossing the platform by using the bridge. As the system is completely automated it avoids manual errors and thus provides utmost safety to pedestrians

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BIOGRAPHIES

RAHUL PANDURANG WANI, B.E.
MECHANICAL ENGINEERING,
SVIT COLLEGE, NASHIK

DHANANJAY RAMNATH GITE
MECHANICAL ENGINEERING,
SVIT COLLEGE, NASHIK

KAUSTUBH KAMALAKAR WANI
MECHANICAL ENGINEERING,
SVIT COLLEGE, NASHIK

AKSHAY NAGESWAR FULSUNDAR
MECHANICAL ENGINEERING,
SVIT COLLEGE, NASHIK