NEW DEVICE ENDS PERILS OF THE RAIL

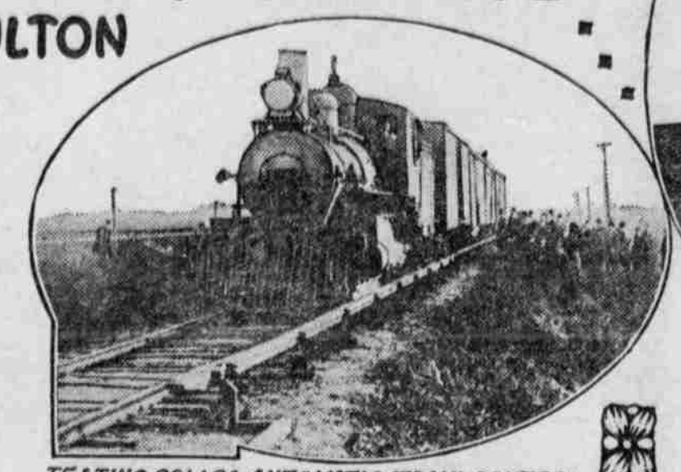
by ROBERT H. MOULTON

THE introduction of steel passenger cars on the railroads having been the means of saving hundreds of lives, the interstate commerce commission now proposes to find some device that will make derailment, collisions and wrecks impossible. A nation-wide search is being conducted under congressional order, and to Anatol Gollos, a Chicagoan, has fallen the honor of being the first inventor in the country to procure an official investigation, the reward coming after three years of work on an automatic train control and recorder. Tests are made by the government only after the preliminary inquiry has shown that the device is practical.

The tests of Mr. Gollos' invention will be made on the main branch of the Chicago, Burlington & Quincy railroad, a stretch of six miles of track having been equipped for the purpose. They will be held under the personal direction of H. J. Lyon, inspector of safety appliances for the commission, who has reached Chicago prepared for a six months' study of the subject.

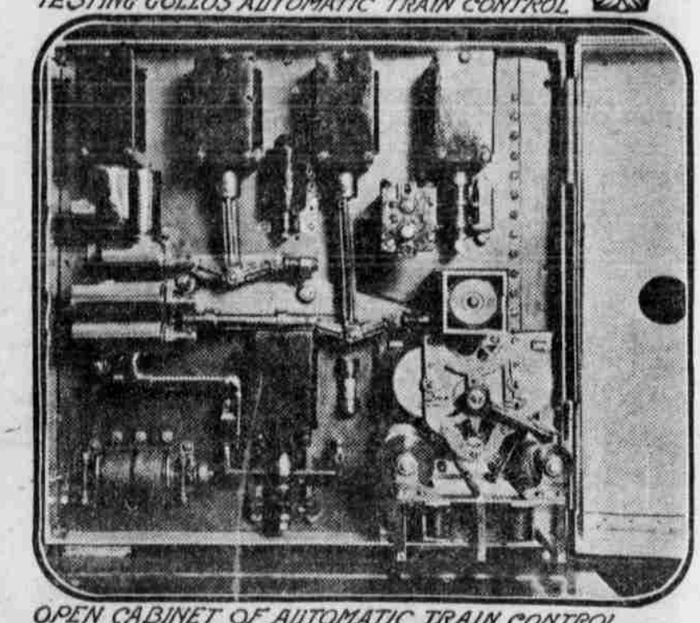
The Gollos automatic train stop device consists of a charged third rail, about one hundred feet long, placed at every block. The energized track comes into contact with a shoe fastened on the tender of the engine which is susceptible to the slightest influence. If there is another train within a radius of one mile and a half, if there is a break in the track, or anything wrong at all, warning is given to the engineer by a shrill whistle placed near his seat. If he does not slow down his train at this warning, the air brakes automatically set. This air is applied quickly, but in a way that stops the train gradually. At private tests given by Mr. Gollos recently trains of all weights and speed were stopped in 150 to 300 feet.

Aside from the fact that the demonstrations already given have proved the practicability of the devices, the inventor claims that they are more economical than automatic installations made according to present practice. In addition, they have the advantages of, first, train control; second, visible and audible signals; third, automatic record to check engineers, thereby holding them to a close observation of signals.

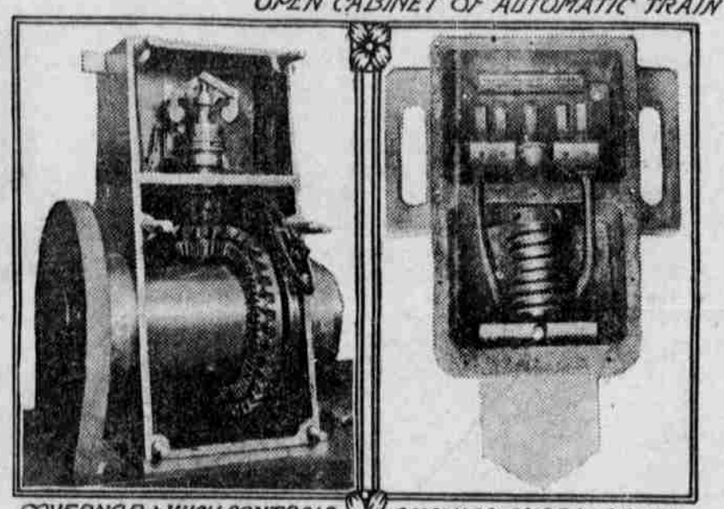


TESTING GOLLOS AUTOMATIC TRAIN CONTROL

ANATOL GOLLOS



OPEN CABINET OF AUTOMATIC TRAIN CONTROL



GOVERNOR WHICH CONTROLS SPEED OF THE TRAIN IN CAUTION TERRITORY

SHOWING SHOE WHICH IS ATTACHED TO THE SIDE OF LOCOMOTIVE

An important feature of the system is that it is so constructed, on a closed circuit principle, that any break, failure or disarrangement of any part of the main track or contact rail connections, or the failure of the electric current, or any disarrangement of the locomotive attachments, will cause the most restrictive indication, when the train will be brought to a stop, until corrections or repairs are made, when it can proceed, but under control and at a predetermined speed only. The wiring is specially constructed so that any crosses or grounds will cause a danger condition. If repairs cannot be made immediately by the engineer, he may cut out the instruments, when the train can proceed, but if this is done a record is made.

Another feature of the device is its elasticity and adaptability to the movement of any and all kinds of trains, irrespective of their motive power or frequency. The system will work equally well on trains operated by steam, electricity, gasoline, or compressed air, and whether such application is direct or by means of the trolley, third rail or storage battery methods.

The initial purpose is to promote the safety of railway operation and to eliminate all danger from lapses of memory on the part of the engineers or others connected with the operation of railways, and to make such a record as will provide an exhibit of proper or improper operation and observance of signals and orders.

The control of the movement of trains is in the hands of the engineers just as long as they observe the restricting signals provided for their guidance, but any failure to do so immediately and automatically relieves them of said control. As soon as the conditions permit of safely doing so, the control is again and automatically restored to the engineer.

The system is of the intermittent contact rail type, with the engine apparatus clear or inoperative while running between points of indication. When the engine shoe makes contact with the contact rail, the engine apparatus is still held clear or inoperative, provided the contact rail is energized. If it is desired to make the control of the speed of the train continuous, instead of intermittent, particularly in congested terminals, the desired object is accomplished by making the contact rail continuous. Both the contact rail and the shoe on the engine are so constructed as to keep them within the limits of the safety clearance requirements, and personal contact with the contact rail is not injurious.

The manner in which the purpose of the system is carried out is as follows:

When a train is standing at a terminal, or at any other point, the automatic apparatus is in such condition that the train can only proceed at a predetermined reduced speed. When the engineer opens the throttle to proceed, it automatically starts a whistle in the cab. This whistle continues to sound and the reduced speed regulation continues until the train contact shoe engages with a clear contact rail. This rail being fully energized supplies a current which sets the control in position to permit the train to proceed at full speed, and also stops the whistle. The contact with this shoe is recorded by a recording apparatus and the contact also causes the lighting of a signal lamp in the cab. The passage of this rail is acknowledged by the engineer, who presses a button which puts out the lamp and this acknowledgment is also recorded by the recording apparatus.

The next action which may be described, is when the contact shoe engages with a partially energized contact rail, which indicates a caution condition. When this occurs, the engine apparatus is again set for reduced speed as when starting out, and the whistle blows continuously. If, in the meantime, the train in the advance block has moved on, or any other obstruction has been removed, so that the next contact rail is in "clear" condition, the cab system will be automatically returned to normal, full speed condition when it passes such contact rail, and the whistle will stop.

On the other hand, if the danger condition continues and the contact rail is de-energized, denoting danger, the train will be automatically stopped when its contact shoe comes in contact with this de-energized rail. This stopping will also be recorded, and at the same time a chime of two whistles will be sounded to warn the engineer that this is a stop application.

If the engineer desires to proceed, he must press a button on the cabinet door, which resets the automatic apparatus to caution or slow speed condition. Having reset the instruments he may now proceed as in the first instance, at controlled reduced speed.

If the engineer has observed a danger signal and stops his train before the contact shoe comes in contact with the de-energized rail, he may, if necessary, in an emergency, pass the de-energized rail. In order to pass the de-energized rail a separate and distinctive switch is provided, which must be held down continuously while passing the rail. The pressing of this switch is also recorded. However, if he should attempt to pass a rail by pressing on this switch before the train has stopped, he would cause a stop application. After passing the de-energized rail, as before described, the train may proceed under caution operation at a predetermined, controlled, reduced speed.

While an automatic control system has many advantages, some of these advantages would be lost, if the system could be freely manipulated, unless such irregularity is automatically detected and recorded. In order to insure the proper operation of this system, and to record the action thereof, as well as to record whether the engineer is properly observing his signals, certain portions of the system are inclosed in a box or cabinet. This box or cabinet is made to contain the valves, magnets, relays, clock and recording mechanism, and is provided with a lock and a special door. The cabinet is about eighteen inches square and six inches deep and may be mounted in any convenient place in the cab.

This system is intended to actuate or co-operate with any suitable form of mechanism on the car or locomotive which is used for stopping the same, such as brake actuating mechanism, and it is particularly adapted to actuate or co-operate with the air brakes which are now commonly employed for this purpose.

The inventor, Anatol Gollos, was born in 1877. Early in life he showed a marked interest in mechanical subjects, and after a general education was sent to a manual training school. There he studied for six years. Electricity, though then in its infancy, had attracted much attention and Gollos dropped all other subjects for a special course in electrical engineering.

After serving a rigid apprenticeship, Gollos went to Germany. There he stayed for four years, during which time he superintended several big government jobs.

In 1903 he came to America, and the following year found him in charge of the main switchboard at the Louisiana exposition in St. Louis.

Opportunities in Mexico attracted him and, after the close of the exposition, he went to Mexico City. There he remained for a year, serving as superintendent on various electrical installations. He was in charge of the electrical installation in the new Northwestern passenger terminal in Chicago and other important works.

TRICKS THAT BULLETS PLAY

Life Saved by the Hook of a British Officer's Helmet Chain.

It has been truly said that, once you fire a bullet from a modern rifle, none can forecast what it will do or where it will ultimately come to rest. Even when a bullet has an uninterrupted course, says Frank Scudamore in the London Globe, it is capable of upsetting all known calculations of its flight and range. Before the battle of Omdurman a sick officer was taken across the Nile and placed under an awning at least 5,500 yards from the nearest point of possible fire. This should have insured him an ample margin of safety, but none the less a stray bullet ate up the intervening three miles of desert, struck him in the head, and killed him.

Shortly before the battle of Giniss, in the Sudan, Gen. Sir Archibald Hunter, Colonel Hacket-Thompson, C. B., and another officer whose name escapes me, were reconnoitering through an opening in the wall of a disused sakeeyeh, or waterwheel. The hole in the wall was so small that the officers had to stand one behind the other to see anything. The officer whose name I forget was in front using a pair of binoculars, while Sir Archibald Hunter was in the rear. The glint caused by the setting sun shining on the glass of the binoculars attracted the attention of a dervish who, together with others, was retiring along the Nile. He stopped, took aim, and fired. It was a very good shot, for it sped through one lens of the binoculars, through the brain of the officer holding them, killing him on the spot, through the shoulder of Colonel Hacket-Thompson, and finally lodged in the breast of Sir Archibald Hunter, where, I believe, it remains to this day.

The vagaries of a bullet when it touches the human frame are almost beyond belief. During another Sudan battle I saw an officer, a friend of mine, go down apparently shot through the head. To my surprise and relief I met him walking about after the battle apparently none the worse, save that his head was bandaged. Then he showed me how a bullet, striking and deflected by one of the hooks of his helmet chain, had run right round his forehead, cutting a groove under the skin, and had then glanced off the helmet hook on the other side.

'TWIXT BULL AND BEAR

How Two Californians Released Themselves From a Critical Situation.

E. S. Collins, postmaster at Knight's Ferry, Cal., and Samuel Baugh, a blacksmith, have just escaped from an encounter with a bull and a bear which they will not soon forget, the New York Sun states.

Collins bought a bull and had him in a corral just above Knight's Ferry. He and Baugh went out to inspect the purchase when the angry animal started after them and gave chase. Collins reached a nearby tree in safety, but Baugh was not so lucky, and crawled instead into a nearby cave, just in time to escape the charge of the bull.

He emerged hastily, however, and again the bull charged him, and he sought refuge in the hole a second time. Finally Collins warned the blacksmith to stay in the cave, saying that the bull would tree them both and keep them in the field all night. For answer, Baugh again jumped in and out of the cave and a moment later, as the bull charged past, grabbed the animal's tail and threw him.

As both men climbed the fence, Baugh explained why he didn't remain in the cave. There was a bear inside which disputed his ownership. The two men returned later and succeeded in dispatching the bear and two cubs.

WHO'S WHO—and WHEREFORE

MAGNANIMOUS TURPIN

Eugene Turpin is the most magnanimous and patriotic of Frenchmen. He has done wonders for his country and has received no remuneration and little credit. Yet he goes on doing other wonders and never complains.

In the early stages of the war the world was told of turpinite, an alleged gas used by the French that brought instant, rigid death to whole companies of German troops yet without visible wounds. Turpinite exists, but it is not that gas. It penetrates armor plate like cheese and is described as making death on the field a pleasure. Thousands who looked comfortably dead have come back to life, complaining, "What is it? Must we go on fighting?" It is a mystery, but the secret is believed now to be in the noise of the explosion, which acts as a "superknockout."

During years Turpin suffered from the malice of men and the prejudices of official savants. He invented fenian fire, capable of throwing panic into an entire army corps by terror and surprise alone, and the French military authorities would not look at it. He invented nonpoisonous paints—with which someone will make a fortune some day, but be sure it won't be Turpin. He invented the French artillery shell actually in use, and he invented melinite, that smashing-in-all-directions explosive which the French army pours melted into shells so cheap, quick and safe to handle that the cannon never lack ammunition.

WASHINGTON'S POLICE CHIEF

Unusually tall, slender, fine-featured, soft-spoken, of highest character, executive ability and broad social vision—that is Raymond W. Pullman, the new chief of police of the city of Washington. He has never been a policeman, and admitted when appointed that he knew little of the practical side of the police business, having been a newspaper man, but the commissioners of the District of Columbia were satisfied they had chosen the right man, and the people of the capital city believe they were right.

Pullman is a Washington product and his new rank of major sits easily on him, for he was commander of one of the crack military companies that are part of the school system of Washington.

"There is one problem in Washington where the police department can be specially helpful," said Mr. Pullman, in discussing the department. "A mass of tourists come to Washington every year, and they are dependent upon the policemen they meet for directions as to how to get around the city, and for other information. A policeman can give a town a 'black eye' more quickly than any other citizen. There is no good reason, in my mind, why he should not 'boost' his town as much as any other citizen, and I believe he can do it by seeing to it that all strangers receive courteous treatment whenever they apply to him."

LODGE AS MODERATOR

It was town meeting day in the little village of Nahant, Mass., and most of the population, male and female, was in the hall. On the platform, presiding as moderator, was United States Senator Henry Cabot Lodge, and for five hours he guided the meeting with all the ease and finesse he ever showed in a big political convention. Running his eyes down the warrant he admonished his fellow citizens that the times did not warrant unnecessary expense or luxuries in town government, and said some people seemed to think all they had to do was to reach into the air and extract money.

During a discussion of garbage removal rules one man said a collector had refused to remove his garbage because there were clam and lobster shells in it.

"What I want to know, Mr. Moderator," said the man with considerable heat and emphasis, "is, are clam shells and lobster shells swill?" The gallery snickered and some of the voters on the floor laughed outright. Without moving a muscle the ranking member of the senate committee on foreign relations replied: "I'm afraid that I am unable to define what is swill. That would seem to be a question which should be addressed to the board of health."

HINDU STUDYING AMERICA

New Yorkers have been immensely interested of late in Dr. S. Paul Chinnapa, a Hindu scholar who has been sent here by the Mysore government to study conditions in America. Especially fascinating to the women are his lectures on reincarnation, which subject he has taken up with great zeal. His fair hearers clamor for further proofs and revelations of the transmigration of souls after death.

Doctor Chinnapa began his higher education in India and received his first degree of B. A. from the University of Madras. He was then made a licensed teacher of the Indian government. Coming to the United States, he took a course in the University of Chicago, where he received his master's degree. On his return to the Orient he was made professor of education in the University of Madras. Dressed in Hindu garb, the doctor is a handsome and interesting figure. His studies in America are especially in the psychological line, and it seems probable that he gets as much from his audiences as they do from him.