

New York .- Of the several monorail | car. He is quoted as predicting that systems demonstrated during the last 300 miles an hour is neither impossihalf-dozen years, none is so fascinat- ble nor impracticable. It is true that ing and astonishingly spectacular as few persons would be willing to inthe gyroscope car, recently exhibited trust themselves in a railway train in England by its inventor, Louis maintaining such speed, and in prac-Brennan, C. B.

Unlike some other attempts to solve to saunter along the monorail at a the problem of transferring passen- mere 125 miles an hour. Together gers and freight speedily, safely and with this tremendous speed, according cheaply from one city to another, Mr. to the inventor, the monorail system Brennan's system is so exceedingly carries absolute safety with reliabilsimple that wonder is expressed that ity. The high speed, he says, will rest it was not before thought of and given rather than fatigue those who travel to an expectant world. by the monorail.

The Monorail Principle.

The principle, of course, is not new, for 75 years have passed since Prof. W. R. Johnson devised the gyroscope, in order to illustrate the dynamics of rotating bodies, and his invention, in the shape of a toy, is familiar to every one; but the application, or at least the method of applying the gyroscope to balance a car suspended upon a mental. single rail or a cable, is entirely novel.

Some years ago a certain scientist applied the principle to a boat, but, while he was eminent, he was impractical, and the invention was a failure. The ties. To reduce friction the flywheels principle was sound, and if it were revolve in vacuums. So great is the not, the inhabitants of. this planet would have a sorry time of it, for means that if the driving power is cut every day and constantly the earth, off altogether when they are revolving revolving around the sun, and spin- at full speed the wheels will still run ning as it goes, shows the principle in at a sufficient velocity to give stabil-

ity to the vehicle for a long time-While the gyroscope car is an orig- from 15 minutes to an hour is the inal invention the monorail is by no claim. means untried. There is a monorail-So far as the gyroscopes are conway in operation to-day in Germany. cerned, it is said that they are so ar-Cars have been running upon the sysranged that they work automatically tem, which follows the River Wupper | and do not require the watchfulness through Barmen, Elberfeld and Woh- of human control. The car may be winkel, for the last three years. By driven by any of the powers now in this system the wheels are on top of the cars, which travel on an elevated The mechanism is a very small part road from which they are suspended. of the car. In the model it amounts to Balance is easily obtained and fairly five per cent. of the total weight of the high speeds are said to have been se- car, but in the full-sized vehicle now cured

System Used in Ireland.

mate. About four years ago a monorail Speed of the Gyroscopes. system was tried at Ballybunnion, Ireland. This was a ground railway. In the models the gyroscopes run at and the line being only some 15 miles the rate of about 7,000 revolutions a

tained at level while the car and "gyros" are at rest. Kept Secret for Two Years.

Although Mr. Brennan completed his monorail two years ago, at the request of the British war office he kept it secret until a month or so ago, when an exhibition took place before the Royal society. Mr. Brennan showed his working model in his own grounds at Chatham to a few persons who are interested in the novel railway. At the demonstration at his home,

where he has laid a rail and stretched a cable which together give in miniature almost every difficult kind of country to which railroading is liable, Mr. Brennan's little car, which is built to one-eighth scale, carried a man weighing 140 pounds. During one of the tests the inventor's little daughter was a passenger. The machine dashed up inclines of one in five, and skirted along the side of a hill which

sloped at an angle of 45. Round acute curves it ran without any loss of stability or appreciable loss of speed. It crossed miniature chasms on a stee! cable and was stopped halfway across until it was photographed, but never tice it might be found more profitable lost its balance. A steel cable was laid on the ground in the form of a monogram, and around this the gyro car traced its way with precision and

celerity. Mr. Brennan, who is 55 years old, is best known for his torpedo, which the British government purchased some years ago for half a million dollars. The illustrations of Mr. Brennan's For this invention, which is highly reinvention explain rather graphically garded in British naval circles, Mr. how he applies the gyroscope to his Brennan was made a companion of the two-wheel car. It should be underbath in 1892. He is consulting enstood that this is the invention. The motor which actuates and propels the gineer of the Brennan torpedo factory. He says the gyroscope car is an incar is no novelty, and the car itself, vention upon which he has been en-



Diagram of the Car.

came to him when he first traveled along an Australian road. The road was badly made, full of ruts, and the bodies of the cars rested on leather

instead of springs. During part of his experiments the British war office came to Mr. Brennan's aid, for the army council believes the possession of the monorail use-electricity, gasoline or steam. of the greatest importance. The war office gave the inventor \$10,000 to continue his experiments, and the council not only made frequent visits to the workshop, but invited the inventor to give two confidential lectures on the being constructed it will be proportionsubject before the chiefs of the corps ately less-two per cent. is the esti-

It is believed that the first practical cently granted the inventor \$25,000



A knowledge of the coming weather | also initiated the practice in this counenters so intimately into every con- try of sending up small rubber baltemplated human action that the ques- loons."

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tion is often asked: What are the The observatory at Mount Weather prospects for further improvement in is now well equipped with the necesthe accuracy of weather forecasts, and sary plant for carrying on this new can the seasons ever be foretold? The and promising work of aerial reanswer is that, while the government search, and has for nearly a year been has a corps of forecasters who are cooperating with European institunow applying all of the knowledge of tions and with the Blue Hill observathe atmosphere that has been re- tory in sending up, on prearranged vealed, little hope for material im- days, kites or captive balloons. These provement in their work can be held kites may be raised in winds varying out until a substantial addition is from ten miles per hour to 35 or 40 made to the pure science of the prob- miles at the surface. With winds of lem. This can only come through ex- less than ten miles per hour it is periment, study and research. With necessary to employ captive balloons. 200 stations engaged in applying the To attain great heights small free rubscience, it is a wise economy to de- ber balloons of two or three cubic vote at least one of them to the work | yards capacity, called pilot baloons, of adding to the knowledge that is are employed. The instrument carnow costing us nearly a million and a ried by the kites and balloons vary half of dallars annually to apply. Ac- in weight from one and one-half to cordingly, those in charge have en- three or four pounds and record variadeavored to lay out a plan of study | tions in the temperature, the pressure, and research leading to an increase in the humidity of the air, and the wind our knowledge of the laws governing velocity. the atmosphere such as should event-

The balloons are filled with hydroually enable our successors, if not our- gen gas in order to secure the greatselves, to add to the accuracy of est lifting power. This necessitates weather forecasts and to make them the use of special apparatus for the

manufacture of hydrogen. At the In order that this country may do Mount Weather Research observatory its share toward the advancement of a strong electric current is passed meteorology along the lines that through water, breaking up the liquid specially relate to conditions in Amer- into its constituent elements of hydroica, it is imperative that the weather gen and oxygen. These gases are then collected and stored in appropriate tory for its own special research work. tanks for future use as occasion may A piece of land has therefore been se- require.

cured and work has been inaugurated As the small pilot balloons carry up at an establishment that is intended their instruments to heights of many to respond to the present and prospec- miles, where the prevailing temperative needs of meteorology. This estures are at all times very low (sometablishment is called the Mount times exceeding 100 degrees Fahren-Weather Research observatory, and is heit below zero), it is necessary to organized on a broad and elastic basis. test the accuracy of the thermograps In order to prosecute the researches at these low points. For this purpose contemplated at Mount Weather, a the observatory is equipped with a them that not. one of them be re-



WASHINGTON .- To his hired help | drawing blanks" to cause them to re Uncle Sam is generous to a degree, going down into his wallet to the extent of something like \$3,000,000 annually to give them a 30-days' outing at the seashore or in the mountains. This sum is for the army of employes in Washington alone and does throughout his vast domain and in leave. foreign countries. Liberal lawmakers

include printers, pressman and navy finally, through hard and persistent efforts, the full 30 days. No sick them, and, strange as it may appear, they seem to be the healthiest class of government workers. The government printing office, the bureau of engraving and printing, and the navy yard are not classed as "hospitals for invalids," as the treasury and other departments are termed. Not getting each, male and female. This gives to pay for being sick, those not entitled each individual employe \$100 leave. to such leave manage to remain in



HEREAFTER women clerks of the department of agriculture will not be permitted to act as private secretaries or confidential clerks for male chiefs of divisions or bureaus. Secretary Wilson has no prejudice

against them, but he deems it due to plant has been established there espe- plant for the manufacture of liquid air, quired to perform services that will who performed the duties of private bring her into such relations with her chief as to enable evel-minded per- eral years, was brought into a notosons to do any gossiping. He consid- riety altogether displeasing to the the women employes in the depart- there was no foundation for the inas private secretaries or confidential the notoriety would not spread. clerks. The fact that the secretary had prescribed such a rule for his own guidance has become known recently through his refusal to permit a woman a particular clerk that he asks to have stenographer to be detailed as clerk her promoted and made private secreto a chief of bureau. He is perfectly tary. Requests of that kind are being willing to have the stenographers refused.

ian institution.

main from duty. In the government printing office, where there are about 4,000 men and women employed, there are only occasional absences on account of sickness, while in the treasury department, with about the same number of employes, the sick list each day is simply amazing. The same is not include the thousands of others true of other departments in which who are on duty and on the payrolls the employes are entitled to sick

So badly abused has been the sick decided that ten months each year leave privilege that at the last session was long enough for employes to of congress what appeared to be a work, and that 30 days for annual determined effort was made to repeal leave. At first this law was for the the law, but the matter was permitted officials and clerks only, and did not to go over, giving the Keep commission and other reformers an opportunyard workmen. Eventually these ity to make further investigation and were given 15 days annual leave, and secure facts and figures. If one is to judge by the policy of retrenchment. and reform so strenuously carried out leave, however, has ever been granted by the present administration, it is entirely safe to assert that sick leave will not be one of the pickups now enjoyed by government workers after the next session of congress.

There are in Washington about 31,-000 employes of Uncle Sam. The salary and wages paid will aver \$1,200 money, and is ready on call for offiextraordinarily good health and per- cials and clerks any time during the form their duties with great regular- calendar year, but employes of the ity. The employes who are not enclass stated are not entitled to leave titled to sick leave must have some- until the beginning of the fiscal year thing worse than a "rocky head and |-July 1.

WILSON BARS WOMEN AS **PRIVATE SECRETARIES**

take dictation from the chiefs of bureaus, but he will not allow them to be detailed to fill positions the duties of which might require them to remain after the working hours or to go to the homes of the chiefs to finish work outside of office hours.

Two years ago, when there was a scandal in the department, the woman



bureau should establish an observa-

of engineers at Chatham.

To Run in India.

monorail using the gyroscope will be built in India, for the India office re-

his experiments, and Mr.

long was only experimental. cars and locomotive straddled the will run at a rate of about 3,000. To road, embracing it as a rider does a horse. Stability was obtained by a tear of the delicate mechanism, the set of wheels which followed a rail on gyroscope machinery is fitted with ball either side of the triangular track. bearings. Mr. Brennan has introduced While the weight was borne by one rail, in reality there were three rails, causes the working part to run on a for without the guide rails traveling on the road would have been, to say the least, precarious. Speeds of 110 miles an hour have been made, if the claims be credited.

Prof. C. A: Albertson, an electrical engineer, invented a magnetic monorail system which, three years ago, excited considerable enthusiasm. By this system electric magnets gripped the rail, raised the load and permitted exceedingly high speeds. A speed of 432 miles an hour was said to be possible by this system, but it is needless to add, these figures are entirely theoretical

German Road Successful.

The Irish monorail and the German aerial system have been put to practical test and the latter, especially, appears to have been regarded as successful. Neither, however, has led to the building of any similar roads. Remarkable and picturesque as are both rotate for some time after the power these railways, Mr. Brennan's gyro- which drives them is cut off. In order scope system has excited far more to provide against accidents, the car is wonderment.

High speed is one of the advantages a crutch, which may be let down by claimed for Mr. Brennan's gyroscope the movement of a lever, and so main- ists in the summer.-Punch.

AFTER DOC SMILEY DIED.

Second Phase of Wire Drumming

That Annoyed Other Operators.

wire," said the talkative railroad op-

always contended that the wires in

"One of his bugs was drumming on

best imitation of 'Pop Goes the

"This was very irritating to the

peaceable and quiet-loving operators

"However, the end must come to all

spring. We all contributed to the

fund for buying floral pieces, 'At

Rest,' and 'Gates Ajar,' with consider-

of us, and Doc Smiley passed in last thing.

his brain box were crossed.

Weasel' you ever heard

Doc stop his drumming.

"Doc Smiley was a fusser on the

so very gently, yet it was thought by Both | minute; in the full-sized machine they onlookers the little creature did not really enjoy the bath, but he would guard against the intense wear and endure it for a little while. When the cage door was opened he would fly out and first rest on Tom's head right between his ears and begin to sing, the his own system of lubrication, which cat keeping as still as a mouse until his little playfellow finished his song. constant film of oil, and reduces the The trick took place nearly every friction to an infinitesimal minimum. morning. But one day a strange puss, Now, the remarkable feature of this marked like Tom, wandered into the car is found when the load is moved room and the maid, believing it was to one side. Ordinarily that side Tom, opened the cage door. Dick flew should be lower than the light side. toward the usurper to rest on the but with the gyroscope monorail the friendly head, as usual, but there was reverse is the case. The heavy side a wild spring, a snap, and poor little actually rises higher than the side Dick was dead! There has been that is light, owing to the balancing mourning in that household, and none impulse of the gyroscope machinery.

Brennan's Modus Operandi.

Little electric current is required to run the "gyros." owing to the care taken to reduce friction to a minimum. But it is essential while the car is on the rail or on a cable--for it can run upon either and maintain its balance

-that the "gyros" continue in motion. When their spinning comes to said the milkman. "Out for a little an end, the car, naturally, falls over fresh air, sir, I suppose." on its side. The "gyros" are so nicely poised and so well lubricated that, as tell whether it's an heir or an heirhas been remarked, they continue to ess yet. I've just been for the doc-

tor.' Tourist-What do the people round equipped with what might be called here live on. Pat?

Jarvey-Pigs, sorr, mainly, and tour-

of the humans has grieved more or felt

worse than old Tom, who goes mewing

and calling for the little bird. But no

pretty fluff of yellow and green flies

Awaiting the News.

"You're early this morning, sir,"

"I dunno," replied Popley, "can't

to him, chirping cheerful greetings.

cially adapted to the investigation of by means of which the instrument the physical condition of the atmos- may be tested to the lowest points phere at great elevations above the likely to be reached at great elevasurface of the earth. Hitherto our tions. knowledge of the conditions of tem- In the near future these small rub-

perature, pressure, humidity and wind ber pilot balloons, carrying with them velocity and direction has been based to elevations of 30,000 to 50,000 feet upon observations made at or near the light self-recording instruments the surface of the earth or upon referred to, will be liberated simulta-

for a longer period in advance.

mountain peaks. Current conceptions neous at 20 to 30 weather bureau staof the laws of storms and of the gen- tions surrounding typical storm ceneral circulation of the atmosphere are ters. Observations obtained in this based upon such observations almost manner at various elevations when entirely. Records obtained in recent compared with the records made at years by means of balloons have dem- the same time at the surface of the onstrated the existence of hitherto un- earth will doubtless throw much new suspected variations and contrasts in light upon the mechanism of storms, temperature at very great elevations, cold waves, etc., and give to meteoroloand have shown that observations on gists a better understanding of the mountain tops and at equal elevations general circulation of the atmosphere.

in the free air vary widely. The necessity for a better knowl-

variations that one of the first steps edge of temperature conditions at in the establishment of the observa great elevations has directed the tory was the installation of a magnetic minds of many meteorologists to the plant consisting of the best modern study of the best methods for lifting instruments for the direct observation self-recording instruments high above and for the continuous registration of the earth's surface. The result has the variations in the magnetism of the been the invention in recent years of ingenious forms of kites and of specially designed balloons for this pur pose. The kite has again become an instrument for scientific research, and now enables us to bring down records of atmospheric conditions at elevations of two and three miles, and even of four miles, as was recently demonstrated at the German aeronautical observatory near Lindenberg. By means of small rubber balloons, marvelously light self-recording instruments have been carried up to the remarkable heights of ten to 15 miles. bringing back records of low temperatures and high velocities which have been a revelation to meteorologists-

records which are compelling a recon struction of existing ideas concerning the dynamics of the atmosphere. Pioneer work along these lines was begun some years ago by means of

kites, both at weather bureau stations and, under the direction of Mr. A. L. near Boston. By experiments begun the air. at St. Louis at the time of the world's fair in the summer of 1904, Mr. Rotch

earth. The standard observatory instruments, both for continuous registration and direct measurement, are of the type devised by Wild for the model magnetic observatory at Pavlovsk. Russia. These are supplemented by a

So important to the study of the sun

is a continuous record of the magnetic

set of Eschenhagen magnetographs, the extreme sensitiveness of which peculiarly fits , them for recording minute fluctuations of the earth's magnetic force.

The principal application of the results of the observations will be to supplement the direct observations of the sun, and thus to carry on the record of the solar activity continuously day and night in all conditions of weather. Researches will also be carried on to determine the existence and measure the extent of probable direct relations between meteorological disturbances and magnetic variations. The magnetic records will also be specially studied in conjunction with the results of observations of the radioac-Rotch, at the Blue Hill observatory, tivity and the electrical condition of

WILLIS L. MOORE. Chief Weather Bureau Department.

story told by a socialist journal of Hamburg to the effect that a group of workmen were able to procure a part of their common library by collecting

Air Ten Miles Above the Earth.

The curiosity of the modern man of cience knows no bounds. One of his issued the following notice: "Do not of an automatic apparatus attached to throw away the tinfoil in which the a balloon, specimens of the upper air The apparatus and the experiment pay for it at its market value. The in Paris not long ago Prof. d'Aubignac reported the result of the analysis of the captured air.

> the composition of the atmosphere practically is the same as at the surface of the earth, although its density,

Black opals of, great beauty are found in Queensland, Australia, be-

secretary for a bureau chief for sev ers it better for the good name of secretary. Although he knew that mental service to make a rule that sinuations against the woman, he had men chiefs of division shall have men to keep quiet and merely hope that

> A majority of the men chiefs do not want women in such positions, but occasionally one comes along who is so well pleased with the work done by



THE flag that floated over Fort Mc-Henry during the bombardment by where it can be plainly viewed by the visitors to the building. the British on the night of September

According to J. B. Taylor, of the 13, 1814, and which inspired Francis United States coast and geodetic sur-Scott Key when he saw it still floatvey, Col. Armstead, who commanded ing over the ramparts at sunrise the Fort McHenry during the bombardnext morning to write the "Star-Spanment by the British fleet, took the gled Banner." is now upon exhibition flag after the rain of shot and shell in the hall of history at the Smithsonhad ceased and had it conveyed to his headquarters. He later gave it The flag, which is about 28x30 feet, to his mother, who was a sister of has been loaned to the institution by Mr. Taylor's great-great-grandfather. Mr. Eben Appleton of New York, for Col. Armstead's mother some years two years upon the personal solicitaafterward, it is said, presented the tion of Dr. Charles D. Walcott, secreflag to her granddaughter, who martary of the institution. As the flag ried one of the Appletons of New lies draped in the glass case, only one York and Boston. Later Mr. Eben of the large stars is visible. It is Appleton came into possession of the backed by canvas stated to have been flag. In his letter to Dr. Walcott Mr. placed there by the late Admiral Appleton says that he is pleased to Preble, formerly stationed at the Bos- loan the flag to the Smithsonian, so ton navy yard. As little of the flag as to enable so many of his countrycan be seen in its present resting men to see the ensign that caused place, it is the purpose of the officials "The Star-Spangled Banner" to of the institution to drape it upon one written.

> ETHEL ROOSEVELT WILL HAVE GAY COMING OUT

WHEN Miss Ethel Roosevelt makes given for Miss Ethel next January. her formal bow to society at the She will not have finished her school-White House next winter Washington ing, but will leave the National Cathewill see the first of a series of en- dral school after the Christmas holidays.

It had been intended that Miss Ethel should go through the entire course, but in the past few months she has been having such a good time was marked by many notable affairs in an informal way that the President in Washington, but with the excep- and Mrs. Roosevelt have decided to tion of a few small dinners which give her a season in the White House. Miss Ethel is very anxious to make her debut while her father is presientertainment at the White House dent. The debut ball will be given which was strictly for Alice, and that in the east room and will be planned on an even more elaborate scale than Whether the continuous shower of the one which the President and Mrs. attentions from her friends and so- Roosevelt gave for Miss Alice. It will bring together the most exclusive young people in New York, Boston, Philadelphia and Washington, and will mark the opening of the gayest

Miss Ethel's first season as a society girl will be notable. According season the White House has known to the present plans, which are being since President Roosevelt assumed discussed, a brilliant ball will be the reins of office.

circuit controlled by Little Bright Eyes than on earth. under the river on a big cable. A "One would naturally suppose that diver was sent down to investigate after Doc passed over to the great and what do you think? Little Bright Eyes had taken the form of a fish majority the rat-tat-tating and 'Pop Goes the Weaseling' would cease. But with a piece of copper wire attached erator to a New York Sun writer. "I it didn't. No, sirree. to its tail. "It was quiet for a couple of nights "You see it was this way: I was after the funeral, till Doc got his out snarin' suckers in one of the bearings over on the new shift. On creeks that empties into the big the wires at night. He could give the the third night, however, the drumriver one afternoon. I got a big one ming started up about midnight and in the snare and had just about landkept it up till nigh on to morning. ed him when he took fielder's choice "There was only one difference and with a powerful swish of his tail from when Doc was alive. I will say yanked the copper wire snare loose.

along the line who wanted to rest o' that Smiley had sense enough to keep "Since that time the big fish had nights, if such a thing were possible. quiet if anyone had a message or a been swimming down stream with But you might as well try to get a train report to send. Doc's shade, or the copper wire traiking in his wake. chorus girl to don a raincoat at a control, or whatever was doing the In crossing the cable the wire got Saranac hotel fire as to try to make drumming after death, was not so caught in the insulation and held the considerate. It would butt in on fish fast. train orders, business or any old "The snare made a connection with

our railroad wire. Of course the fish

"The nuisance had us pretty well made strenuous efforts to get loose tied up and the company got its wire and every time he swished his tail testers out, tracing up and down to he'd make dots on our wires; just like Rest, and Gates Ajar, with consider testers only where Little Bright Eyes one of those patent wigwag, auto-able liberality and ease of mind. Not find out just where Little Bright Eyes one of those patent wigwag, auto-matic sending machines which are

death, but every one thought he would "These fellows had a good deal of coming into us. Strange miz-up, be better off on the other end of the difficulty, but they finally gumshoed wasn't it?"

SAVE YOUR OLD TINFOIL. the trouble to where the wires pass Some Workmen Did and Made Money

Enough to Buy a Library.

Save and sell your tinfoil. The recent rise in the price of tin has led to a curious development in this and other countries

Several of the best known chocolate manufacturers on the continent have chocolate is enveloped. It is composed of pure metal, a metal which is dear. Keep it and before long it will be called for by our agents, who will chocolate industry in Europe spends nearly \$4,000,000 per annum in tinfoil and these \$4,000,000 are generally thrown to the winds."

It is further explained that the pres ent high price of tin is due to the action of English and Dutch speculators who have forced it far beyond its ac-

What seems to give some color to the alleged preciousness of the paper found in Queensland, Australia, be-wrapped around the chocolate is the sides 56 other kinds of precious stones.

and selling these fugitive sheets of tinfoil. tertainments such as have not been held since the days of Nellie Grant. True, the social career of Mrs. Nich-

latest exploits is trapping and bringing down to the ground with the aid olas Longworth, as Alice Roosevelt, from the height of almost ten miles. were of French invention, and at a were given for her shortly before she meeting of the Academy of Sciences was married there was only one large

was her coming out ball. It simply showed that the the height of 51,000 feet above sea level ciety generally precluded Miss Alice from having many affairs of her own was never made clear. of course, is comparatively slight.

