ARMY OF THE COMMON WHEEL

Pleasures of Pumping Over the Smooth Roads of Europe.

LIGHTS AND SHADES IN BLOOMERDOM

Particular Incidents-Plans and Projects of Home Clubs and Happenings Roundabout

Good reads and miles of them running in every direction is what makes cycling in Europe a source of pleasure the like of which cannot be enjoyed in the United States. The pleas ire of wheeling in this country is confined to city streets. Boyond their boundaries is no certainty of a good country road except when weather conditions are favorable. Thro: ghout Europe there are country highways from city to city, most of them superior pleas re and comfort.

An American wheelman who recently returned from a wheeling tour of Europe says the roads there are magnificent. Among the most famous of these roads, and possibly the most magnificent piece of engineering in the world, is the driveway from Nice to Monte Carlo. It is the Corniche road, made in the side of the mountain. The surface is of the hardest broken granite, and is kept in such drained that five minutes after a rain it is dry. There are gutters on the roadside, and these gutters are drained at intervals to deep ditches where the water is held until carried off and n and distributed among streams.

In France every department cares for the roads which are kept in the most perfect repair. Should one department have a surplus, after the roads in that section have been properly attended to, that money, instead of lying idle, is expended in laying out another road, and when more money can be secured this new road is completed and made as beautiful as the old ones. Immeliately upon the laying out of a road trees are planted, and within a few years there is an archway to shade the rider in the summer months, and the big trees break the wind of the winter.

The roads of Italy, as of all Europe, are very one, but these are sadly in need of repair. The country, however, is bankrupt and can hardly make the necessary improvements, yet the roads were so well and properly construc'ed originally that they have steed the ravares of time. In many instances there are good roads which have not received a bit of improvement in twenty years.

One of the most striking examples of a road and the manner in which a road should be built is the Appian Way, which leads from the city of Rome. Built 2,000 years ago by the Caesars, it is even now considered one of the best roads in the world. Within the past fiftee: years there has not been one cent expended upon the driveway, and, from general appearances, it can stand another twenty ears without repair.

years without repair.

In Germany the same grand roads exist. There are very few clubs in that country. The bi yele riders are great touris s, however, and can be found over all parts of Europe. In Germany there exists the Radfahrer Verein, an organization much after the fashion of the League of American Wheelmen. It has about 45,000 members.

The principle which seems to be followed in the building of roads is, first, a proper foundation, made hard by drainage. Then there is placed a layer of broken stone, and the top surface is usually made of small stones, which are watered and rolled by immense stone rollers, until the surface is as solid as a rock and smooth as possible. The improvement in the machines for making improvement in the machines for making roads has advanced and is still advancing. The roads of all Europe are so extremely good and are so well built that there is not a entirety, no matter how wet or how dry and warm the weather may be. The engineers of Europa consider asphaltum the best material

for building streets, and this is used very extensively both in Paris and London. The American wheel has gained promi-ence in France, and especially in Paris, where it is considered the best. The French machine weighs from thirty-two to thirty-five pounds; the American wheels weigh about twenty-five to thirty pounds.

The cafes and restaurants all over Europe cater to the wheelmen. In the early evening the waiters place on the sidewalk bicycle stands, and riders can have their machines locked up, and when they are ready to depart they present a check and their wheel is released.

released.

It is a common sight to see from ten to twenty wheels at one time in front of cafes and restaurants of the cities of Europe. The craze for cycles has swept over the world, and the number of riders is wonderful. for the reason that the country roads are s

SPREADING IN THE SOUTH. Rev. J. B. Hawthorne's bitter arraignmen of the women cyclists of the south has had the one effect to be expected—increased the number of fair riders throughout all Dixieland. In Atlanta, where Dr. Hawthorne turned loose the torrent of his displeasure. number of women cyclists is said to be d by on the increase. The bloycle school t i there by the board of women managers of the Cotton States Exposition for the beneft of the women's department, has pros-pered since the good doctor's onslaught as it never did before. Other clergymen of the town do not agree with Dr. Hawthorne, and the vomen say he attacked their favorite form of exercise merely for advertising purposes. He looks like Wilkes Booth, the assassin of President Lincoln, and the women declar that he likes to be conspicuous. But Dr. Hawthorne has not stopped his fight for Dr. liawthorne has not stopped his fight for anything the women have said yet. He continues his crusade from his pulpit and through the press, saying very implement things about women who ride wheels, and especially those who wear bloomers. And the women? Some of the most aristocratic of them continue to ride, and not a few have begun since Dr. Hawthorne first denounced the "drop frame" bicycle as an invention of the devil. the "drop frame" bicycle as an invention of the devil.

Half a dozen young fellows were seated in front of the postoffice in a near-by town the

other evening, when one of them suddenly called to his companions.
"Say, get onto his nibs on the bike. He'll header coming down that hill like On came the rider and descending the hill of course, aroused the chivalrous pature of the boys, who naturally ran to the

one of the boys, soothingly.

"Peller, nothing," the rider replied. She remained sitting on the grass, for it was in reality a "she" and the boys beat a hasty retreet. There was great excitement and a gathered, among them being several. There were tears in the fair bloomerwomen. There were tears in the fair bloomer-ite's eyen as she flashed a message with them toward the group of three women that had gathered at the scene of the mishap. It must have been mental telegraphy, and the women apparently understood, for they felt in their bodices for something that looked like plus. The masculine speciators politely turned their backs and walked away, while the women surrounded the young rider, who had not arisen from the grass. There was a she't convention amon the women and in a few moments a somewhat disarranged pair of bloomers were seen disappearing over the

BLOOMERS AT A BALL.

Brosklyn girls have given a bloomer ball.

And everybody there voted it a success.

Forty-six people were in the opening march and all of them were some kind of bicycle costume. Of course the men did not atract much attention, knickerbockers on the wheelmen long since have ceased to be a movelty. But the girls—bless their brave little hearts—came out in all the varieties of the latter-day costume. Anything from poluminous divided akirts to knickerbockers

went. And the girls inside them said they went, too; they never had such a delightful time. And the men-well, one can imagine that they said only the politest of polite things which are always said at balls. When I c'clock came every one mounted a wheel and went home properly excerted or excerting, according to sex.

So far as reports have been received, no damage, has resulted from this ball although

Vermonter, and in the several instances in which it has been tried it has worked almost as magical as magic. The Vermonter had a wife who rode a bicycle and who in-sisted on wearing bloomers every time she went out for a spin. Neither protests nor appeals nor threats could induce her to wear another costume. So one day the husband, with a patience that would have caused Job the best American streets for cycling of bloomers for every hen in the poultry yard, and, drawing them on the hens, called his wife to look at them. They looked just like she did, he said, when she was on the wheel in costume. A little more graceful, perhaps, but not a bad reproduction. There e some sharp words for a moment, but woman hasn't worn bloomers since. What's more, she now declares she never will

SHE MAKES BICYCLES.

A hundred dollars for a bleycle which she made herself enabled Mrs. Cassie Jorgensen to spend her vacation at Charlevolx, Mich., and bowl along the country roads on the second bicycle of her own manufacture. She is the wife of Emil Jorgensen, who keeps a bicycle shop at 1589 North sted street, says the Chicago Record. was born in Charlevoix, and was married to Jorgensen two years ago. Her malden name was Cabe. Emil was born in Copenhagen, Denmark, and worked for a Chicago bicycle firm. Miss Cabe worked in a dining room

intil she met him. Mr. Jorgensen and his brother Axel opened an "assembly shop" a year ago this month. After his marriage he moved into the flat hove his bicycle rooms. Last winter it occurred to Mrs. Jorgensen

that the new woman ought to manufacture ter own wheel. Then, she reasoned, she would be more expert at fixing it if it broke down. Besides it wouldn't be as likely to break down. So she selected parts of a frame from the first batch of materials that came in the spring. She had helped her husband about the

shop before and didn't need much coach-ing about how to go to work. She began operations April 1 She filed down the ends of pieces of tubing, fitted and brazed the joints and polished the frame to be enameled. Then she filed the sprocket down to fit the chain and put in the axle, fitted the cranks and made the pedals. She bent fine plano wire for the spokes and strung them from the hub to the rim. Having fitted the tires, she called the wheels done. She set them up with the frame, which was enameled by professionals, and adjusted the gearing. The frame was for a lady's wheel. She adjusted the seat and bent the rods for handlebars, putting on the cork hardles. She in-tended to ride it herself, but one day her husband showed it to a customer as a sample of what his wife could do. The man wanted a wheel for his wife and offered \$100 for it. It was sold, and Mrs. Jorgensen set about naking another.

with the dexterity and experience acquired in putting up the first one, Cassie could make better time. She started to work June 1, and in a week had her second machine ready to ride. She rode it and kept it to ride during her summer va-cation when she went to her old home in

Michigan. DON'TS FOR WOMEN WHEELERS.

Don't be a fright. Don't carry a flask Don't carry a mask.
Don't wear a golf hose.
Don't faint on the road.
Don't wear a man's cap.
Don't wear tight garters.
Don't stop at road houses.
Don't forget your tool bag.

Don't attempt a "century."
Don't coast. It is dangerous.
Don't say. "Feel my muscle."
Don't criticise people's "legs." Don't beast of

Don't wear loud-hued leggings. Don't wear clothes that don't fit. Don't wear jewelry while on a tour Don't wear jewen, face on the road.
Don't wear rubber soled cycling shoes.
Don't go to church in your bicycle costume.
Don't imagine everybody is looking at you.
Don't tempt fate by riding too near the

Don't ask, "What do you think of my

Don't try to ride in your brother's clothes to see how it feels." Don't overdo things. Let cycling be ecreation, not a labor.

IMPACT OF THE WHEEL. The ability of a bicycle rider in rapid mo-tion to do serious damage in a collision with another machine or with a pedestrian is fully appreciated by a few whilelmen. A man weighing 150 pounds and moving at the rate of ten feet a second (which is only about seven miles an hour) has a momentum of 1,500 pounds, leaving out of the account the weight of the wheel. This is sufficient to upset any pedestrian with terrific force. It has been suggested that the pneumatic tire forms a sort of fender which would prevent aerious concussion in case of a collision. It would undoubtedly have a slight modifying effect, but it would be of light account. 150-pound rider, spinning at the moderate speed of seven miles an hour, would result in a smash-up with a force of 3,000 pounds. In view of these facts, it is no wonder that bleycle accidents are often very serious.

The newest and oldest converts to bi-yeling in Maine are a 75-year-old citizen Topsham and another gentleman of about div becoming expert riders. Several Connecticut towns have adopted the

WHEELING NOTES.

acks on Sunday in order to prevent bleycle

recently to k a trip together from their Polish estate to Mont Dore by wheel.

The bloycle fever in San Francisco has encouraged local dealers in sporting goods to begin preparations for manufacturing wheels. They have a patent by which they say they can turn out as good a which as there is in

Henry James, the novelist, has become an expert bicycle rider. He is spending his vaca-Pedestrians who happened to be on West lenesee street between 6 and 7 o'clock a few Genesee street between a six of sevenings ago, relates the Syracuse Post, we e-amused to see a little girl, who did not ap-pear to be much over 3 years of age, dressed in bloomers and riding a bicycle. The ma-chine was only about two feet in height. The

little one rode along apparently supremely inconscious of the attention she was attracting. The bicycle craze here does not seem to be limited by age or condition. Old and young, rich and poor, are to be seen enjoying the pleasures and benefits bestowed by the wheel. good advice to novice riders: "Don't dedge a bleyele rider, either male or femile. Stand still, and the rider will get along all right.

Posts, trees, stones, etc., never dedge, and only beginners ever run into them. If you see a 'bike' coming straight at you, don't dodge; if you do, you will contuse the rider. If you stand still 'in the middle of the road.' or wherever you happen to be, the rider will take care to give you plenty of room; but if you go dodging to get out of the way, the chances are there will be a collision, and you will be the worse burt of the two. Therefire, don't dodge."

A new bleyele shoe for women is described

as follows: The top is lengthened out into a three-quarter length legging, the top of which would buckle just above the corve of the calf. It is made the lace up within three inches of the top, and then there are two small buckles with their straps so that the top can be drawn to any degree of tightness, according to the notion of the fair wearer. Running the entire length of the lacing and buckles is a tongue of soft leather to protect the weare from the sace laces and buckle straps. The shoe is of canvas with leather trimmings, and

Whisperings of the Wheel.

The cycle dealers who recently held a twoday bicycle race meet at Fremont have advertised another such event, at which they a narrow margin.

tributed cement between makes the patch

Each succeeding week of the National cir-cuit and its racing results clearly demon-strates that E. C. haid of the Columbia team is the man of the year. He is the only rac-ing man that has ever lowered the world's competition record for the mile three times within one year, and won eighteen of twenty-six one mile scratch events in which he has started, and all in the remarkable average time of under 2:10. In addition to this he has won two of this year's national cham-pionships, the one-quarter and one-half mile, besides other numerous races of varying distances, and established state and track records on all sorts and conditions of tracks. His wonderful achievement in lowering the world's one mile competition record 1:58 1-5, at Chicago last Friday, was greatest performance of the year up to date. It is a new competition mark for all classes of racing and was made with triplet pacing on a dirt track. Baid finished the last eighth unassisted, and it is to be regretted that the intermediate times were not taken, as without doubt every fractional distance lowered. As the previous record breaking

than ever, and adds additional luster to his laurels. The Omaha Bicycle Park association has decided not to give any more professional bloycle races. When it opened its track there seemed to be a strong demand for professional events, but a great many bicycle enthusiasts now frown npon professionalism and imagine that a race with that signification means 'fake,' consequently the park association will bow to this prejudice and give only amateur attractions. Short races will be the principal cards. The professional races have been, we are convinced, perfectly square, and the riders have ridden to win, but the number of entries to these events being so small made the races lacking in in

has been mostly accomplished this year by the aid of quadruplets on cement tracks, the

record of Bald stands out in stronger relief

The University club of Omaha has given up the project of enlarging and rebuilding its bicycle track for this year at least, but hopes to be able to have it in shape for the early spring racing next season, when it will try to make it one of the best quarter mile tracks in the west. It will, however, hold a few race meets on the track as it is

The handicappers in the west seem to be pretty hard on the scratch men.-Interstate Cycler. This is not true of Nebraska's handicapper, Mr. Livesey, as he always believes in giving the scratch men a show, and the result is that some of the prettiest finishes are in the handicap races. At Kearsey on are in the handicap races. At Kearsey on July 4 and 5 the handicapping was as near perfect as could be and the handicap races were the preitiest events of the day. So far this season Mr. Livesey's work has been above or more miles on Sundays to and from his

public appetite as a regular diet. Tandem team races between rival towns

eginning to create local excitement, all of for points between teams of different cities or teams of manufacturers. Omaha now has several tandem teams and we may look for some good races of this kind before the rea-son closes. Among the teams are the Colum-Peerless, Stearns, March, Syracuse and

Raid who has made such a splendid record of wins on the track this season, should mee with occasional defeat, as was the case las veek at Marinette, Wis. He has been working incessantly since last March, when he went to California to compete in the Pacific coast race meet, and the attendant strains of long jumps by rail will tell on the most vigorous. He retains a strong lead for the onors of the season, however, and as the most trying part of the National circuit is over, is liable to maintain his winning form

Much has been said of late regarding the hest methods of repairing single-tube tires, but a large majority of cyclists seem to be still groping in the dark regarding the mysteries of puncture healing. The mistake most patch whose crown tapers to a thin edge, inefficient for the requirements of a well made tire. A leading manufacturing house, who are ploneers in single tobe making, and whose products have become fautous on ac-count of their general excellence, advocates the use of a patch with edges blunt, and as thick thereat as at the center where the plug is attached. A patch of this kind when properly cleaned, comented, inserted and ad-justed has elements of strength by virtue of its density and firmness of texture. A repair made with a blunt-edged patch plug is as permanent as the tire itself and will not ork loose and break because the edge of the patch with its large area is a resisting power perceptible effect.

Leaves from a Tourist Note Book Miss Anna Londonderry, the plucky little globe circler, has been the guest of Mr. and Mrs. Randall while in the city.

Members of the club will receive mileage credits for all club runs attended this month.

Peter Peterson started for Fremont last Sunday morning and completed a good round century before he returned to the city. He reports the roads rough and in some places unridable. His riding time was well inside ten hours and total time inside the required limit of sixteen hours.

The Tourist drill corps is now quite a feature with the club boys. Very few fancy movements have been attempted, the officers being of the opinion that the corps should become proficient in the simpler foot and wheel movements before attempting the more intricate maneuvers. The corps will appear in full uniform on the evenings of the grand

orize to club members for competition a stant ful gold medal, the member making by greatest number of centuries during the the bis no use of any one else trying it, as he has it marked for his very own. The contact will be run under the rules of the Tour at Century club, and only such centuries as are allowed by that club will count. pointed as color bearers for the month of

derry on her ride to Chicago. The Tourists, in company with the other city cycling clubs, will escort the ladies as far as Cresent City. ia., provided the roads are ridable and the

President Walker and Mesars, Barnum White, Bruner and Melton are attending the Running state encampment at Hastings, as members of the National Guards. The club run called for Fremont last was abandoned on account of bad Sunday weather.

there are others in tan, blue and black, and. The club register at the "Pump House" most pliant of ail, in soft gostskin, and all tells the following tale as regards the posibettamed with a lightweight flexible sole, and

competition. The table includes the mifeage for July and August. Several of the riders who were counted in the tle last month have dropped back several miles and others have forged ahead. Mesars. Jenkins, Gunther and Hartson now lead for the Taylor medal, with

and went home properly escerted or escerting, according to sex.

So far as reports have been received, no damage has resulted from this ball either to the biomers or to the girls who wore them. The ball was perfectly proper, there was a suitable number of chaperones on hand, and the devil had no opportunity to become unduly familiar. The bloomer evidently has come to stay—just so long as a sport like wheeling makes some sort of a rig of that general kind the sensible thing to wear.

CURE FOR THE BLOOMER CRAZE.

A cure for the bloomer craze has been found at last. It is the invention of a shrewd Vermonter, and in the several instances in which it has been tried it has worked almen. than \$50, and the prizes hung up for them are always more valuable than for the "A" miles: F. H. McCormick, 8 runs, 176 miles: Fred Shelda, 7 runs, 183 miles: F. H. McCormick, 8 runs, 176 miles: Fred Shelda, 7 runs, 183 miles: F. H. McCormick, 8 runs, 176 miles: Fred Shelda, 7 runs, 185 miles: F. H. McCormick, 8 runs, 171 miles: Fred Guldner, 5 runs, 186 miles: Dave Harding, 5 many so-called tire repairing outfits for many so-called tire repairing outfits for so many so-called tire repairing outfits for single-tube tires that contain utensils and material so radically at variance with the proper methods of repairing this class of tires, that were it not for their superior qualifies, shich even a bad repair job cannot totally efface, they might suffer in the long runs, 182 miles; G. M. H. H. Jones, 4 runs, 193 miles; Al Wolf, 3 runs, 182 miles; C. M. Foster, 3 runs, 183 miles; F. E. Vandenburg, 3 runs, and if investigation follow, "unknown" to the size of puncture. A large size plug should have a large size crown, of the same thickness from center to edge, and it is folly to use any other. The plug must be properly supported at its base from the inside, and when a repair is made in this manner with the proper material and care it never becomes defective. The natural cohesiveness of the rubber and the evenly distributed cament between makes the patch and tire as one piece. from the contest. Commencing with October the mounts ridden by the riders will be the mounts ridden by the riders will be published along with the mileage as a matter of interest to the many who are keeping tab on the good-natured struggle. The average weight of the wheels ridden in the club is twenty-four pounds and the average gear sixty-tour. Nearly every make of wheel sold in the city is represented upon the club

erning the contests for mileage, attendance and hill climbing. The rules are plain and to the point and can be found at the "Pump House." Club runs will be managed strictly in accordance with the rules in the future. The club will take its outing at Papillion today, "providing the roads are good and the weather lair." (This expression is stereotyped now, the regular Sunday rains being the cause.) A hill climbing contest is on the

A REVISED PROVERB.

New York Sun. Go to the sluggard, thou ant! Consider his ways and be wise; Why worry and fret, and toll and sweat, While he at leisure lies?

You labor from morn till evening, From early spring till fall, But the sluggard eats as many sweets As you, with no labor at all,

You fill your store for winter, But some old hungry hen Will scent your wheat and with sharp-clawed feet Will scratch it out again.

Then learn from the sluggard, O ant! Enjoy your time as it flies; Nor rack your brain for a heap of grain While he in slumber lies. RELIGIOUS.

D. L. Moody is planning to put a bible in the hands of each of the \$50,000 criminals in this country. It is said that a church in Topeka has em

ployed a woman whistler to whistle sacred music every Sunday. Rev. Dr. Field, a young Oxford-bred ritualistic clergyman, is devoting his life to work in the negro slums of Boston.

Brooks of Berlin. His work greatly re-sembles that of the famous American Episco-palian prelate, and, strangely enough, his personal appearance is also very similar.

principal of the Gethsemane college, in Kentucky, has been appointed a colonel on Governor Brown's staff. When ordered to attend encampment Brother Reginald laid aside his white cowl, and, attired in military uniform,

escorted the governor under his secular name as Colonel Darnley Beaufort. Ira D. Stankey, the famous evangelist singer, is now at work writing a history of the gospel hymns, and that work will un-doubtedly prove very interesting. The gospel hymns have made an epoch in the religious history of the age, and no one more com-petent than Mr. Sankey could be found to tell

the story of their origin and growth. Up to the present time the only woman who has ever dared to set foot in the cloistered precincts of the Grand Trappe Monastery, at Soligni, in France, was Queen Marie Amelle. After her visit, so the story runs, the monks repayed the cloisters through which she had passed, considering that their abode had been desecrated by the feet of even a royal woman. But now a new church is about to be consecrated there, and for the nine days between August 20 and September 8 persons of both sexes are to be permitted visit the sacred inclosures of the monks.

SWEETHEART, GOOD-BYE

The dew is on the summer rose,
The summer moonlight sadly glows.
And softly, too, the night wind blows,
And echoes sigh for sigh.
Ofttimes good night with smile and bow
I've said, while laughter lit they brow;
But comes a sadder parting now,
Sweetheart, goodby.

Goodby! If we should never meet
Thy smile hath made the past so sweet
Fair memory's lamp shall light my feet
Where'er my pathway lie.
But now, when fortune bids me stray
From all that makes the present gay.
Alas! how hard it is to say,
Sweetheart, goodby. Sweetheart, goodby.

Goodby, sweetheart, with eyes of blue.
Whose glance can shame the morning de
And teach the stars to shine more true,
For thee I'd gladly die:
You are my dream asleep or wake,
For thee my heart would rather break
Than live in bilss for other's sake;
Sweetheart, goodby.

The Merry Melon.

The merry melon is not the only desirable but one of many fruits that here grow in such perfect profusion and abundance. The fact is that fruits of all kinds grow luxuriantly and in abundance. Fruits fresh from the vines and trees are gathered eight months in

the year. Vegetables can be had fresh from the garden twelve menths in the year. In September while the pastures of Illinois and other western states are parched and dry, and farmers compelled to draw water for their stock and feed them the grain fields, our pastures are covered with fresh, green, natural grisses and all cattle are fat enough for beef. Any cereal or prod-uct that can be produced in any of the northern or western states can be produced here be produced in the regions named. Peach trees three years old, from the seed, bear from a peck to half a bushel per tree, and there are bearing grape vines three years old from the cuttings.

A great advantage to the garden farmer at Orchard Homes is the fast fruit and vegetable trains that take his product to markets of the north and west in 12 to 24 hours time. Another advantage is the fact that Orchard Homes lands begin within half mile of the railread depot. Another advantage is the fact that these lands pay a return of \$200 to \$400 per acre each year. Another advantage is the fact that soil, climate, rainfall, railroids all combine to the profit of the Orchard Homes settler. For full articulars see or address Geo. W. Ames, general agent, 1617 Farnam at. Omahs Neb. Farnam st., Omaha, Neb.

The Blue of the Sky. The blue color of the sky has been the sub-ject of recent investigation, and the conclu-sion arrived at ia that it is the color of the air as seen through forty-five miles of reflec tion. Balloonists who have ascended to a height of five miles, say that at that distance from the earth everything above is of inky blackness, while the blue of the sky about

THE FIELD OF ELECTRICITY

Installation of Electricity and Its Effect on Fire Risks.

RULES ADOPTED BY THE UNDERWRITERS

speculations on the Speed of the Future-Electric Transit and Power Projects Requiring Vast Capital.

Electricity as a fire hazard has an interest

this cause within a given period in the United The insurance companies early saw the dangers in electrical appliances which otherwise

gers in electrical appliances which otherwise promised so much for the convenience of the people. As early as 1881 a paper was read by Mr. William A. Anderson, superintendent of the New York Board of Fire Underwriters, before a convention of the fire insurance companies in New York, which pointed out the salient features of requirements which should be insisted upon. The first code of rules followed, and these, with Mr. Anderson's paper, were received so well not only in the United States, but also abroad, that they were translated into French and German. The rules came into general use throughout the country. They have been revised from time to time, as advancing knowledge demanded it, and are now promulgated by the central authority of the national board, and will remain unchanged until further amended by that body.

The rules are as follows:

1. Have your wiring done by responsible parties and make contract subject to the underwriters' rules. Cheap work and dangerous work usually go hand in hand.

2. Switch bases and cut-out blocks should be noncombustible (porcelain or glass).

3. Incandescent lamps get hot; therefore all infishmmable material should be kept away from them. Many fires have been caused by infishmmable material should be kept away from them. Many fires have been caused by infishmable material should be contact.

from them. Many fires have been caused by inflammable goods being placed in contact with incandescent lamp globes and sockets.

4. The use of flexible cord should be re-

stricted to straight pendant drops, and should not be used in show windows. 5. Wires should be supported on glass or porcelain, and never on else run in approved conduits. 6. Wires should not approach each other nearer than eight inches in arc and two and ne-half inches in incandescent lighting.
7. Wires should not come into contact with

8. Metal staples to fasten wires should not 9. Wires should not come into contact with ther substances than their designed insulat-

ing supports.

10. All joints and splices should be thoroughly soldered and carsfully wrapped with ale.

11. Wires should always be protected with tubes of glass or porcelain where passing through walls, partitions timbors, etc. Soft rubber tube is especially dangerous. 12. All combination fixtures, such as ga fixtures with electric lamps and wires at-tached, should have approved insulating joints. The use of solt rubber or any ma terial in such joints that will shrink or crack by variation of temperature is larger-Dr. Ernest Dryander is called the Phillips

surrounding the globe, and such spark ar-resters reaching from globe to body of lamp as will prevent the escape of sparks, melted copper and particles of carbon. 16. Are light wires should never be con-

16. Current from street railway wires should never be used for lighting or power in any building, as it is extremely carger 17. When possible the current should b

shut off by a switch where the wires cuter the building when the lights or power are 18. Remember that "resistance boxes," "regulators," "controllers," "rheostats," "reducers" and all such things are sources of heat and should be treated like stoves. Any resistance introduced in an electric circuit ransforms electric energy into heat. ric heaters are constructed on this principle Do not use wooden cases for these stoves nor

mount them on woodwork. ELECTRIC SPEED. There has been a good deal of rather sensa-tional talk about the great speed to be at-tained by electric cars in the hear future, says the New York Tribune. However sanguine he may be about the ultimate fu-ture, though, Mr. Westinghouse talks cau-tionsly on this point just now. It is a simple tiously on this point just now. It is a simple matter to get an electric motor up to almost any speed and to put enough current into it matter to get an elegatic motor up to almost any speed and to put enough current into it to develop that speed. But, aside from the question of economy, there are certain other difficulties to be overcome before passenger trains are run at 200, 150, or even 100 miles an hour. Perhaps the greatest essential to high speed, with electricity or with steam, is to have an ideal road—free from curves and grade crossings completely forced in with the people want a horseless carriage to do would be to make a journey between daylight and darkness, when they would either regrade crossings completely forced in with the people want a horseless carriage to do would be to make a journey between daylight and darkness, when they would either regrade crossings, completely fenced in, with a solid bed, perfect construction and proper automatic block signals. Mr. Westinghouse so as to have no possible obstruction from that

building firm in Wilmington, Del., said to a Tribune reporter last week that so far as car construction was concerned there was little improvement that could be made to promote ligher speed. He would give a slightly heavier flange to the wheel, perhaps, have the tires turned afresh after setting them, render the exterior of the coach smoother to lessen atmospheric friction and make other trifling modifications, but he declared that cars were really strong enough and safe enough now. The great peril, he insisted, lay in the track of the ordinary road under present conditions. This veteran car builder doesn't feel depth not exceeding nineteen feet. The two lines when riding at a speed of over inside tracks will be re-erved for express the road of the clear, and passengers will descent the clear, and passengers will descent the clear. rails themselves. It is too late, perhaps, for existing roads to comply with all these re-At present there are no surface indications that any such schemes are on foot, but good judges believe that the capital would be forthcoming if special high speed electric roads were projected by capable men. Not only is great clearliness and some economy attain-able by electric traction, but the demand for time saving by busy men is steadily increas-ing and it is a dominating factor in business. That is what makes the telephone and tele-

IRRIGATION AND ELECTRICITY. IRRIGATION AND ELECTRICITY.

An enterprise which will involve an outlay of \$2.000,000 or \$3.000,000, and which, if successful, will supply San Francisco with 20.000-horse power by electric line, besides running a new electric road and opening a new irrigation project, has been undertaken by Californis capitalists, whose plans are now so far advanced as to be made public in detail. Seventy-five miles north of San Francisco there is situated, at an elevation of 1.317 feet above the sea, a body of water known as Clear lake. It has its outlet in Cache creek, a stream supplying about 327,known as Clear lake. It has its outlet in Cache creek, a stream supplying about 327,-000,000 gallons of water daily. The plan of the newly formed company is to construct a hig dam on the creek some five miles below the lake outlet. From this reservoir the water will be carried in large pipes along the stream to a point known as Wilson's farm, where the power plant will be established

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WRITE FOR SAMPLES.

12. All combination fixtures, such as gas fixtures with electric lamps and wires attached, should have approved insulating joints, The use of soft rubber or any material in such joints that will shrink or crack by variation of temperature is largerous.

13. Electric gas lighting and electric lights on the same fixture always increase the hazard of fire and should accordingly be avoided.

14. An electric are light gives off sparks and embers. All are lamps in vicinity of in mitted in a direct overhead line on large. mitted in a direct overhead line on large bare copper wires to San Francisco and the adjacent cities. The transmission of the electricity under the waters of the bay is a most difficult and costly problem, but recent inventions have made this possible without the much loss of powers.

too much loss of power. THE HORSELESS CARRIAGE. To be perfectly free to go about at will, an electric horseless carriage needs a storage battery of about a ton weight for three-horse power, and that would not be force enough to propel the vehicle handicapped by such a weight. The storage battery of an electric wagon must be about seventy pounds to the four-horse power. One possible solution of the electric horseless-carriage problem would the electric horseless-carriage problem would be the throwing aside of all attempts to go about at will, and simply establishing a lot of trolley lines, so that the electric wagons might go almost anywhere. There is a great deal of hard sense in an article on "Les Voitures Automobiles" in the June number of the French scientific monthly L'Industrie Electrique, by E. Hospitalier. He says that while the Paris-Bordeaux race for heresless carriages demonstrated the sur-Med. Dept. Col. Chem. Co., Washington, D. C. for horseless carriages demonstrated the su-periority of petroleum, he cannot wonder at the absence of electricians in this contest, which he considers of little practical value. According to M. Hospitalier, no one wants to know how long it will take for a pleasure carriage to go such long distances; all that is necessary to find out is which is bette-for a race not extending over ten or twelve

turn home or be where they could recuperate the wasted energies of their steel horse. This French writer, while admitting that there is no comparison between electricity and the gas motors for such races as one from Paris to Bordeaux and return, still believes that electricity will be the final choice for travel between big cities which have systems of electric power-houses. UNDERGROUND ELECTRIC ROADS New York's \$55,000,000 subway will be begun early in 1896, and is to be completed within three years. It is a great undertaking. It will embrace thirteen miles of fourtrack underground electric railway, running from one end of the island to the other, and a branch line from Union square to Harlem river. The right of way under the streets is

sentials just mentioned, of a suitable track an hour and stopping at stations a mile and a for a speed of 100 miles or more an hour, he half apart. The outside tracks will be occuwould add thorough machine work on the pied by iccal trains, with stations a third of a rails themselves. It is too late, perhaps, for mile apart. The through fare will be 5 cents existing roads to comply with an these requirements, and therefore it may be necessary to look to entirely new corporations train at any station, and, without extra charge, secure a transfer to an express train trains will run three minutes. it to a company guaranteeing 3½ per cent on the investment and an additional 1 per cent for a sinking fund. NEW SMUGGLING RECEPTACLE. For a long time the customs authorities of Belgium have known that large quantities of jewelry were systematically passed over the French border free of duty, but they were at

a loss to discover how the smuggling way done. In the luggage van of the exp ess which runs between Paris and Brussels is a which runs between Paris and Brussels is a case which holds the accumulators when the train is electrically lighted. A key of the case is held by the conductor of the express, a foreman porter and an excise efficial of the border station, but none of these ever appear to use it. The other day, as the train ran into Quevy the border town a contemp in to use it. The other day, as the train ran into Quevy, the border town, a cestoms in spector took it into his head, more from officiousness than suspicion, to open the chest. To his amazement the case was filled to the lid with watches, chains, rings, bracelets and all kinds of dutlable jewelry, to the value of over \$1,500. There was an exciting scene. The train was always and account of over The train was delayed, and a council of custems officers was held, in spite of the protests of the passengers at the delay. It was decided, pending further inquiries, to detain the conductor and the foreman porter at beavily both in jewelry and hard cash in con-

THE DOCTOR'S COLUMN. , Brooklyn.—Have a burning sensation in stomach. Digestion poor, Sallow complex-Please advise,

Take gastrine, a tenspoonful three times a day after meals. Natrolithic Salts, a tea-spoonful in a half tumbler of water, before breakfast, twice a week.

in five drop doses, on the tongue, three times daily. A dove of Natrolithic Salts twice a week is advisable.

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Cerebrine, in five-drop doses, on the ongue, three times daily, last dose three hours before retiring. Lens, Buffalo.-What will cure indigestion?

Gastrine, a teaspoonful three times a day, after meals. H. F., Denver, Col.—Send full name; will W. T. PARKER, M. D.

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