

## BICYCLE NOVELTIES FOR COMING YEAR

New Features in the Manufacture of  
Bicycles for '98.

### SOME BIG CHANGES ARE EXPECTED

**Advent of Chainless Machine Will  
Bring About a Conversion to In-  
cased Gearing--More Varieties of  
New Models and Mechanical Wrinkles  
Than for Years--Range of Prices.**

From the New York Sun.  
A greater variety in bicycles will be offered next year than has been the case in four or five years. Less than fifteen makers have arranged at present to make a bevel gear or chainless bicycle, while all the others have been working with different ideas of how to produce and successfully market a wheel to compete with this new machine, the appearance of which has created so much talk. There are more than two hundred manufacturers who produce a well-known brand of bicycle, and will present something new, great or small, for 1898.

The appearance of the chainless wheel has spurred every manufacturer onward to a new model. Within a week all the makers of prominence will have samples of their 1898 models on exhibition. The next thing to be noted is that through a great diversity of pattern, both in the lines of the wheels themselves and their driving mechanism, there is a pronounced tendency toward the adoption of some form of protection for the gearing. There will be several varieties of chainless wheels on the market, and probably not a few which will be classed as "freaks." All of these will have their driving mechanism enclosed, but further it is found that those makers who will put out chainless wheels will almost universally adopt a gear case, and offer it either as a regular model with inclosed chain, or else will offer some kind of chain case on option at extra charge, and recommend its use. Thus the advent of the bevel gear wheel promises to accomplish a complete conversion of the American mind to the idea of enclosed gearing, which has for years been accepted across the ocean. There will, however, be a marked difference between the American gear case and the English type hitherto known as being unsatisfactory. This seems to mean that the gear case has had to come to America to find its perfect expression.

### ENCLOSED CHAINS.

A wheel which will figure most prominently as a new model next year will be one with a gear case, or "inclosed chain," as some makers intend calling it. Considering that the gear case is a new device, this situation is at first sight quite surprising. The gist of the matter lies, however, in the fact that a number of manufacturers have been at work on the improvement of gear cases, and claim to have attained perfection. The leather, cordwood, and metal cases which have been brought from England have been far from satisfactory, because of their being heavy, unsightly, and, above all, failing to thoroughly exclude dust and water. Yankee ingenuity has introduced aluminum alloys and light steel with rubber for joints, so that it seems unquestionable that the American gear case of today is an article far superior to its English cousin.

During the past year the American type of case has been gaining in favor through trials by century riders, military men, and other long-distance cyclists. Starting with the promise that a perfect case is obtainable, the advocates of inclosed chain wheels contend that it gives all the advantages claimed for bevel-gear wheels, plus those of a flexible driving mechanism.

Besides the bevel gear and the inclosed chain or gear-case models, there are several new styles of driving gear to be offered for 1898, as well as a number of plain chain wheels which will look very much like the accepted type of 1897. An Indiana manufacturer will offer combined cone and chain gear, entirely inclosed, with a crank of variable throw. This machine will be put out in large quantities. It consists of an axle with spur teeth on the end of it, which is revolved by means of teeth on the inside of a gear ring that is continuous with the crank. Thus when the crank is on the downward thrust the rear surface of the ring is in contact with the axle cogs and gives a long leverage, while on the upward pull the ring has revolved so that it touches the axle in the rear at the end of the crank when thrown its return throw. An ordinary sprocket is stationary on the axle, and revolving with it moves the chain, which travels over a rear sprocket the same as in an ordinary wheel. A reduction of lost motion and the variable crank throw are the chief virtues claimed for this invention.

### IMPROVED CHAIN AND SPROCKET

Another concern will come out next year with an improved chain and sprocket driving gear, not inclosed, as it is claimed will be as indifferent to the attacks of mud and dirt as any housed gear. The device will consist of an improved sprocket, similar in appearance, but different in detail, from one which has been on the market during this season. The sprocket has a double rim with small solid disks of steel, which each revolve on an individual axis, fixed at regular intervals. The links of the chain in passing over the sprockets engage with these rollers instead of with fixed teeth, as in the ordinary sprocket. The rotary action of these novel sprocket teeth prevents any accumulation of mud or dirt, so it is claimed, and under tests made with a dynamometer some surprising results have been obtained. By applying a brake to the rear wheel

a revolving resistance was obtained, and then by shoveling sand and mud into the chain pull was made. With the old form of sprocket the chain pull varied from 48 to 150 pounds, while with the same rolling resistance the pull on the chain with roller sprockets varied only from 49 to 53 pounds while the sand and mud were being added.

A manufacturer in Ohio will bring out in about two weeks a chain wheel with some entirely novel bearings, also a chain wheel with a cushion frame, and he will offer gear cases on option. About the first of the year the same maker will place on the market a chainless wheel of entirely new mechanism. It will be without bevel gear or spur gear, clutch, or friction action—a wholly original method of power transmission—although it is not claimed that it involves any new mechanical principle. In external appearance it will resemble the new bevel gear wheel, except that the box at the crank axle will be larger and of different shape, and there will be a box at the rear smaller than the one in front and different in shape from it, as well as being different from the incasement of the bevel gear. What the internal mechanism is not likely to become known until the maker chooses to exploit, although it seems certain there must be a revolving driving shaft running inside the rear fork.

A peculiar driving gear will be put out by a New York manufacturer, which comprises a wheel with spur teeth at the rear and rear axle with a flexible driving rod moving longitudinally between. This wheel, however, is intended to figure only in a extraordinary character with the chain wheel of the maker. In the line of old ideas revived, a manufacturer who is not among those in the first row has developed a driving method using a series of balls which move in a channel around the rear and crank axles in much the same elliptical fashion as a chain, one ball forcing the other and all rotating as they move.

### CHAINLESS WHEELS.

A chainless wheel without a level gears that has been exhibited in New York for several months past will be put out in a small way by its inventors, but may figure quite largely because of the possibility of the mechanism being adopted by other makers.

For six months it has been expected that such people would treat the castaways harshly. Misfortunes, in some days, were deemed to be proofs of the anger of the gods. (John i, 18) and robbery and murder were not unknown. Intelligence of the cure being noised abroad the sick were brought from all directions. (verse 29), as they were to Jesus in the time of his wonderful ministry. (John iii, 1) The sick were wrought through the power of the Spirit. (Cor. xxi, 13) And when Paul departed from the governor's house he was the recipient of many honors. (Tim. v, 17) besides those things which were necessary for physical comfort (verse 19).

**Voyage.**—For three months, until the beginning of February opened the navigation, the shipwrecked tarried on Miletæ. During this time it is presumed that the gospel was so preached as to admit the founding of a church. Another corn ship that had wintered in those parts took on board the soldiers and prisoners and weighed anchor for Syria. (Acts xxvii, 1) and after a voyage of two days, making due circuit, tack touched at Rhœtum for a day. Here the south wind sprang up, which was so violent that they were driven through the straits of Messina, but were overtaken by a storm and all the events of life were supposed to be directly ordered by deities. In the popular though retrospective justice followed the guilty everywhere. (Numb. xxxii, 23)

**Divinity.**—Undisturbed by the superstitions of the people Paul shook the viper from his hand into the fire (verses 1-12).

er out of the "brake notion." Three of this designated lot will offer a new back-pedalling brake without extra charge, and several of them will probably offer on option any kind of brake that is practicable for their wheel. In saddles, also, the offerings will be more generous, and the more expensive saddle for which riders have previously had to pay extra, will be offered on option by a number of makers.

Wheels will be more highly finished as to nickeling, enameling and decoupage stripes. China's silver tips on the rims will be used by a number of makers, and several will give expression to the idea of putting a sprocket on each side of the rear wheel hub which originated with a Chicago manufacturer three years ago. This enables riders to change their gear from a lower to a higher ratio simply by taking out the rear wheel and reinserting it reversed. Crank hangers will next year be dropped still lower with relation to the rear hub, probably to an average of 2½ inches. The same size and gauge of tubing will be used, but there will be a general strengthening of fork crowns.

### BEARINGS.

There will be a great deal to interest the student of bearings in next year's models. This will not be only in the way of new angles of caption, but also in some marked departures in the relative relations of cups and cones. A tendency toward the use of smaller balls and relatively more of them in larger races will be noted. The craze for large balls is believed to have overreached itself. The theory that two balls under 500 pounds of load will bear proportionately 250 pounds each, while four balls of half the size will bear only 125 pounds each, and therefore roll more freely and do less cutting on the surface of the races appears to be gained ground.

**Prices.**—Prices will vary from \$35 to \$125 in 1898. The \$125, of course, is for the new gear wheel of the licensed make. Quite a few makers will put out a \$100 wheel. They will not make many of them, and the cataloguing of them will be done chiefly to emphasize their claim that a truly fine-grade wheel cannot be made to sell for less than \$100, and that they make a perfectly fine-grade wheel.

A number of makers will catalogue their racing wheel at \$100, and a second grade at \$90 to \$50. These manufacturers who have not made more than 50 or 60 racing wheels in past seasons, and expect to make fewer next year. Altogether prices will vary greatly; the most popular price among the best known makers is likely to be \$75, with a few varying it from \$70 to \$80, but there will also be a number of manufacturers who conceive that the popular demand is for a reliable wheel at \$50, and will endeavor to meet it.

**Turkish Atrocity.**—Turkish atrocity and American charity are set forth in strong contrast in the report of the National Armenian Relief Committee, now ready for publication. Some interesting extracts from the report read as follows:

"Turkish misfortune account of helping infidels, during early life-time of many now living, shows that every Christian race and locality has been scourged and brought low, us the Koran requires."

"The account is as follows:

Date. Race. Number. Date. Race. Number.

1822 ..... Greeks ..... 50,000  
1850 ..... Nestorians ..... 10,000  
1860 ..... Syrians ..... 11,000  
1870 ..... Bulgarians ..... 15,000  
1894-6 ..... Armenians ..... 30,000

The total massacred in seventy-five years ..... 171,000

"The table makes no account of massacres with less than 10,000 victims, nor of the hundreds which are more quickly put down. In one massacre of over a hundred thousand have been slaughtered under the present Sultan, Abdul Hamid II., whose Armenian victims alone exceed all who perished in the ten great persecutions of the early Christians under the heathen Emperors of Rome."

Colleagues are varied in size, combination and style of collar, a novelty being of Persian lamb, narrow on the shoulders, with a point at the front reaching the waist (giving exactly the effect of a large revers) the back not so deep, finished by mink tails and little heads, a cluster at either shoulder, at the two front points, and at the back.

Collarlets are varied in size, combination and style of collar, a novelty being of Persian lamb, narrow on the shoulders, with a point at the front reaching the waist (giving exactly the effect of a large revers) the back not so deep, finished by mink tails and little heads, a cluster at either shoulder, at the two front points, and at the back.

## Sunday School Lesson for November 7.

### PAUL IN MILETA AND ROME.

Acts XXVIII, 1-16.

BY J. E. GILBERT, D. D., LL. D.,  
Secretary of American Society of Religious Education.

**CONTEXT.**—Last lesson covered only part of the account of Paul's voyage to Rome. The remainder of the twenty-seventh chapter records the story of his shipwreck and escape, fourteen days after leaving Fair Havens. The items of that story are full of interest, the sounding of the bottom, getting out of the storm, and the anxious waiting for the day dawn, the attempt of the crew to desert the ship and Paul's effective warning, the break of the long fast and the consequent good cheer of nearly three hundred souls (verse 37), the throwing of the vessel into a little creek, the breaking by the fury of the waves, the proposal to kill the prisoners, the struggle in the waters, the final deliverance of all from the deep. The disposition of the ancient heathen to seek divinity in human form is an indication of the universal need of the heart of man (Isa. vii, 11) realizing only in Jesus Christ. (Isa. vii, 11.)

**HEALING.**—The episode of the viper presented the way of salvation to the islanders from the scene of his shipwreck was a town in which resided Publius, the chiefman or governor of the island, Paul and his Christian companions were received courteously and lodged three days in the house with the chiefman. Tim. to the healing the apostle ministered there to the father of a physician who lay sick of a fever. Although Luke was a physician was employed instead of medicines (verse 18), and with good results, (John xiii, 14-18) showing the days of miraculously healings were not passed. Intelligence of the cure being noised abroad the sick were brought from all directions (verse 29), as they were to Jesus in the time of his wonderful ministry. (Luke xiv, 1) The physicians wrought through the power of the Spirit. (Cor. xxi, 13) And when Paul departed from the governor's house he was the recipient of many honors. (Tim. v, 17) besides those things which were necessary for physical comfort (verse 19).

**PRISONER.**—Paul's rest and communion ended on the third day. He was a prisoner bound to the port of Corinth and must appear at Rome. (Acts xxv, 11) distant a hundred and forty miles. News of his arrival had reached the Imperial City, and brethren set out to meet him (verse 15). In April Forum he caught sight of a company of centurions, tribunes, and ten miles farther on, at Thess. Taverna, another company. When he saw the little throng of those who loved him although entire strangers he thanked God and took courage. Nothing could be more favorable than his arrival in Rome, and he was received as a man symmetrical. (Phil. ii, 1-2) Encouraged by his friends through scenes of ever-deepening interest, along a road more and more crowded with stately memorials, the Lord's slave and prisoner entered the city, in March, A. D. (1) Through the kindly intercession of the centurion he was assigned liberty (verse 29).

**VOYAGE.**—For three months, until the beginning of February opened the navigation, the shipwrecked tarried on Miletæ. During this time it is presumed that the gospel was so preached as to admit the founding of a church. Another corn ship that had wintered in those parts took on board the soldiers and prisoners and weighed anchor for Syria. (Acts xxvii, 12 and 13) At Miletæ, a shipwrecked prisoner, an utter stranger on an unknown island, surrounded by superstitious natives, Roman soldiers, and criminals, Paul received the name of Paulus, and became a companion to the apostle. (Gal. i, 16) and through the efforts of his friends, through scenes of ever-deepening interest, along a road more and more crowded with stately memorials, the Lord's slave and prisoner entered the city, in March, A. D. (1) Through the kindly intercession of the centurion he was assigned liberty (verse 29).

**CONCLUSION.**—The lesson shows how a good man may triumph over difficulties, and win victory. His secret is to be made difficult helpful to the greater purpose of life. (Luke xxii, 12 and 13) At Miletæ, a shipwrecked prisoner, an utter stranger on an unknown island, surrounded by superstitious natives, Roman soldiers, and criminals, Paul received the name of Paulus, and became a companion to the apostle. (Gal. i, 16) and through the efforts of his friends, through scenes of ever-deepening interest, along a road more and more crowded with stately memorials, the Lord's slave and prisoner entered the city, in March, A. D. (1) Through the kindly intercession of the centurion he was assigned liberty (verse 29).

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