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THE ANNUAL BICYCLE EXHIBITION AT THE MADISON SQUARE GARDEN, NEW YORK CITY.

As we go to press, the annual cycle exhibition under the auspices of the National Cycle Board of Trade has, with much eclat, come to a close. It opened January 18 and closed January 25. It would be impossible for us to attempt to describe all that was there, but the task is made easier by the fact that the 1896 bicycle has been built practically upon the lines of the 1895 wheel, and that the novelties shown there have, by force of circumstances, become sifted down to those presenting real points of merit, so that they are more interesting and fewer in number than hitherto, the age of so-called "freaks" in bicycles having, apparently, passed.

Wheels for a number of riders are shown in the Fowler and in the Stearns exhibits, both exhibits showing sextuplet wheels for carrying six riders at once. The Fowler "sextet" is 13 feet long with 125 inches wheel base; weighs 137 1/2 pounds and is geared to 153 inches. There are four front fork sides, two on each side of the front wheel. This and the Stearns sextuplet attracted much attention. The chains of the Stearns sextuplet are graduated in size from front to rear in accordance with the stress that they have to receive, the powers of the six riders being, of course, exerted simultaneously on the last chain.

The frames, in general, are practically of the same construction as those of the past year, being almost universally of the diamond Humber type. Tubes of D-shaped cross section are used in the Singer wheels, which are of English construction, these having for the rear forks tubes of this section. It is not easy to see that much is gained thereby, although, of course, it is conducive to narrowness of tread.

The Wolf "Sociable" is a wheel that attracted considerable attention. It is a tricycle, adapted for two riders, seated side by side. This company and the Columbia Company show wheels adapted for army use. The "Sociable" is shown carrying a Maxim gun, the Columbia is shown with a Colt rapid firing gun. An army tandem is also shown by the Columbia Company, carrying two guns, a signal flag, and a complete outfit for two soldiers. Military men are now realizing that the bicycle will have its place in war, military science pressing into its service everything available.

Another exhibit attracting considerable attention is the so-called "Upright" wheel, a rear-driven safety with small front wheel and with handle bars carried around behind the rider, leaving the front unobstructed. The mounting is done from the front, and the position the rider assumes is perfectly upright, the handles coming on a line with his sides. The frame, approximating to the triangular shape, is very strong, and it is claimed that the bicycle can be made of exceedingly light weight. This is a concession to what might be termed the rational rider, one who desires to sit upright. The Owen bicycle has a somewhat similar frame of triangular outline, the saddle being at the apex. This is mounted in the usual manner. The Hardy spring frame bicycle is an appeal to the constituency of riders who desire comfort. It is provided with a spring frame by which all jar is taken from the rider, and in its construction the following feature is carried out: The three essential distances, those between the handle bars, the saddle and the crank bracket, are absolutely invariable, so that the rider on a rough road may be rising and falling with the spring, but the three critical distances never change.

Another feature in the construction of bicycles is shown by the Diebel center bearing used in the Fairmount cycle. This is a bearing for the crank shaft, which bearing is made to contain only a single row of balls, the necessary strength being given to it by making the diameter of the circle of balls large enough to insure a proper leverage; in this way a wheel is constructed with but three inches width of tread.

Several electric lamps are shown; one is equipped with a storage battery and there is supplied with it a dynamo to be run by water power to be taken from a house faucet. This will enable one to recharge his own battery. Some primary battery lamps are shown. The majority of wheels are fitted with wooden rims, but the Eagle Company show their wheels fitted with aluminum rims of their own manufacture and of improved section, designed to make them stronger and more rigid than hitherto. One of the features of their exhibit was a wheel with unbrazed joints to be taken apart, in order to show the uninitiated the precise construction of the bicycle frame. As another innovation in wood, numerous examples of wooden handle bars appeared, and a bicycle was shown with wooden frame pieces in place of tubes.

Another very interesting exhibit was Jakobson's tandem attachment. By means of this attachment, the front wheel being removed from one bicycle, it can be fastened to another so as to produce a really practical three-wheeled tandem. The repair of bicycle tires was exemplified in a number of ways, including vulcanizing apparatus for the more permanent repairing, apparatus both of the electrical and steam variety being shown, while various kinds of repair kits for the riders' use were exhibited. For those who travel with their wheels a great convenience in the shape of the Streat collapsible bicycle crate was shown. This crate is made of wood, with iron joints, to shut up into very small compass. It can be instantly opened to receive a bicycle. Those who have had the annoyance of crating their own wheels will appreciate the convenience that this presents.

Numerous cyclometers were shown, and among others an innovation in the shape of a chronodometer or combined chronometer and cyclometer worked like a stop watch. The rider, without leaving his saddle, can start a special distance hand simultaneously with a time hand and can stop them again, thus enabling him to obtain for himself a record with chronometrical accuracy of his time for a mile or for any desired fraction thereof. This instrument is self-winding and forms one of the important advances to be noticed.

Carrier cycles were shown in considerable variety and were fitted with pneumatic tires, being a distinct advance of the London carrier cycle, so extensively used by tradesmen in that city. One type, termed sometimes a jinriksha, was provided with seats for two passengers. This vehicle may yet obtain fame in Japan as well as here.

Continuously ringing bells for attachment to the hub of a wheel were shown. Perhaps the most striking novelty in bells was the Bridgeport handle bar bell, which has already been shown in our columns. In it the metal cap at the end of the handle forms the bell, so that it is practically invisible, or rather indiscernible by the ordinary observer.

The weights of wheels are but slightly increased in the majority of cases. Some wheels use 1 1/4 inch tubing in place of the 1 1/2 inch used last year. Tires in some cases are made slightly heavier. But to one who has grown fond of the American wheel, it is a real pleasure to find that the menace of heavier construction, which was taken as impending over the season of 1896, has passed harmlessly away, and we still can ride wheels ten to fifteen pounds lighter than those which obtain favor abroad.

THE FEBRUARY SKY.

BY GARRETT P. SERVIS.

Jupiter now reigns supreme in the starry heavens. Rising late in the afternoon at the beginning of February, by 8 or 9 o'clock in the evening the great planet is in an admirable position for observation. He is still in Cancer, forming a neat little triangle with the stars delta and gamma. Just east of him glimmers the "Beehive" cluster. He is moving slowly westward, and in the course of the month will travel about three degrees toward the border of Gemini. At the close of February he will be some three degrees east of north from the remarkable triple star zeta Cancri, whose nearer components, being about one second of arc apart, form a convenient test for telescopes of moderate power. The more distant component is about 5 1/2 seconds from the principal stars.

Those who do not possess telescopes should not fail to try their opera glasses or field glasses upon Jupiter. With a strong glass of this description all of his four principal satellites can be distinguished when they are well situated for observation. On February 3, for instance, about twenty minutes before midnight, Eastern standard time, three of the satellites will appear strung out on the west of the planet, while the fourth will be seen on the east. A similar, but even more favorable, arrangement of the satellites will occur at the same hour on the 17th. On the 24th, same hour, they will be quite symmetrically arranged, two on the west and two on the east. I have several times derived much satisfaction from the pleased surprise expressed by persons who, having no expectation of visiting an observatory, had not dreamed that they should ever see the moons of Jupiter with as slight an aid as that of an opera glass.

Venus and Mars are together in Sagittarius at the beginning of the month, rising some two hours ahead of the sun. Both are moving eastward, but Venus much more rapidly than the other, so that on the 9th she will pass Mars at a distance not much exceeding a degree and a half, Venus being on the north. By the end of the month she will have entered Capricorn, Mars remaining in Sagittarius. Those who take the trouble to rise early enough to see these planets in the morning sky will also behold the glorious spectacle of the Milky Way, which is nowhere more brilliant than in the region where Venus and Mars are now crossing it. Photographs and telescopic views show that the galaxy in this neighborhood is composed of a wonderfully intricate intermixture of star clusters, star fields, star clouds and nebulae.

Saturn is in Libra, rising on the 1st of February soon after 1 A. M. and on the 29th about two hours earlier. The north pole of the planet now leans toward the earth, and the rings are widely opened. Splendid discoveries concerning this planet should mark the closing years of the nineteenth century, for Saturn has just begun to receive the attention it deserves in some of the great observatories.

Uranus is also in Libra, about five degrees east of

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