

Hand  
A. H. OVERMAN,  
President.  
A. G. SPALDING -  
Vice-President.

OVERMAN WHEEL CO.

MAKERS OF

VICTOR BICYCLES.

OFFICE  
AND FACTORY:

CAICOPEE FALLS - MASS -

BRANCH HOUSES:

188 Columbus Ave.,  
BOSTON - MASS.

429 10th Street - N.W.  
WASHINGTON - D.C.

SPECIAL AGENTS

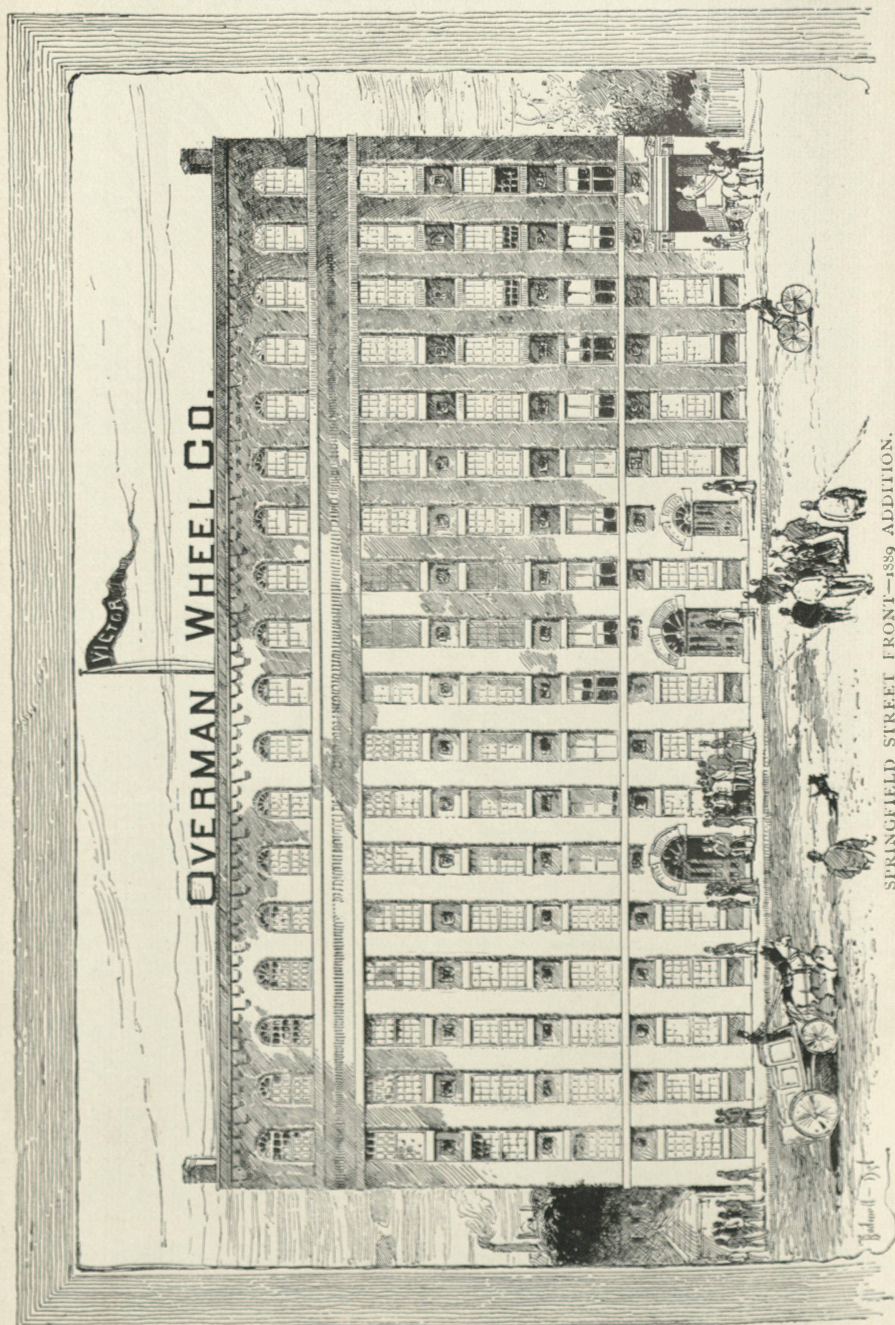
A. G. SPALDING & BROS.

NEW YORK

CHICAGO

PHILADELPHIA





## OVERMAN WHEEL COMPANY.

1890.



IN this our ninth year as makers of high grade cycles, we bring to the riders of America abundant proof of our industry and search for improvements during the year just past.

We have since our first establishment added constantly to our facilities for manufacture to such effect that to-day our factory stands unsurpassed—our machinery is the latest and best, and our resources, as makers of high grade bicycles, are second to none in this or any other country. The entire earnings of a large and successful business have been invested in plant, patents, and resources for making bicycles fit to lead the world.

We believe we build the best bicycles that money, machinery, and brains can produce.

We do not build for present profit only, but for the future as well, and in the years to come we hope to reap the benefit of having founded a lasting reputation for doing good work.

We are to-day manufacturing our complete product in our own factory, our entire plant being devoted to the making of high grade bicycles. We make nothing else and are the only American makers of any note of whom this is true.

American riders are asked to buy much rubbish. Irresponsible dealers import poorly made machines from other countries, and little makers spring up at home on every side, making imitations of bicycles and loudly proclaiming them the best.

Riders are met with confusing advertisements at every turn and offers very tempting to the uninitiated are freely made. We make this business suggestion—*Buy the best* and buy it of responsible makers whose guarantee is known to be good.

It will be remembered that the Rover type safety, which is now the leading machine in the trade, was first made in America by us. We have, therefore, had more experience with this kind of machines than any other American maker, and are better able to understand and provide for what may be required of them.

We will not burden the public with descriptions of intricate machinery and detailed accounts of methods. Processes are

2236 4/21/82 TL 435.083 083 1890



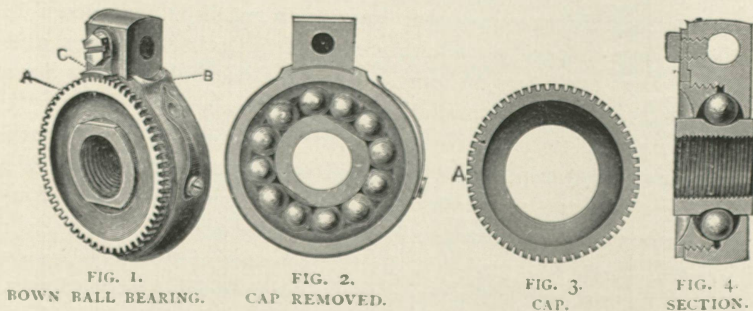
nothing, products everything, and it is needless for us to assure riders that it would be impossible to produce such machines as Victors without the best plant and materials, combined with labor long skilled in the art of cycle-making—requirements which are fully met in our own factory, fitted with machinery unexcelled for doing the finest work.

Our steel is the result of a great deal of experimenting for the purpose of finding out what steel is best adapted to the great strain to be borne in the various parts of a bicycle. It is made without limit as to the cost of production; and the entire lot for the output of the coming year was made at one time, in order to insure uniformity in quality. This cannot be when makers buy their steel in small, scattering lots, as it is impossible to make different lots of steel precisely alike.

Wherever it is possible we make the parts of our bicycles hollow, and for such parts we use nothing but the best weldless steel tube, which is made for us in Birmingham, England. This stock is marvelously strong and light and is essential to the best work. It is very thin and is finished to gauge inside and out.

We use only the finest Para gum in our tires—a solid body of round rubber. Riders are often told by makers that the introduction of strings, wire, wood, or wind will improve rubber tires. Such methods will undoubtedly cheapen tires but will not improve them.

So we might continue to enumerate the various articles of material which are used in the Victor Bicycles, and could say of each article mentioned—it is the best obtainable.



NOTE.—The cap A bears equally on all balls. By screwing it up one notch the space allowed to each ball is narrowed by  $\frac{1}{1000}$  part of an inch, making a perfect adjustment for wear.

Two points, above all others, are important in cycle-making,—rigidity and minimum friction. To both we have given a great

2236 4112



deal of attention, and will ask the reader to study the following description, and learn how we have made a bicycle as rigid as a steel bar and with so little friction that the wheels almost seem to run themselves.

The enemy which cycle makers have most to contend with is friction. The question of cycle journal bearings has been a wide and troublesome one from the beginning. Two great obstacles were to be overcome; first, friction; second, wear. A bearing may be ever so nicely fitted, but without perfect means for adjustment it will soon wear and become loose. It is now conceded by all that cycle bearings must be balls, so arranged that a single row or circle of them will form a complete journal bearing. The balls and the surfaces on which they travel must be as hard as glass, and above all and most important, there must be perfect means for adjusting the surfaces which come in contact with the balls, so that when there is wear, even though it be as little as the fifteen hundredth part of an inch, the bearing can be altered to compensate for such wear. In a word, a cycle bearing must be in that apparently paradoxical condition, at the same time very tight and very loose; that is, perfectly free to spin and entirely rigid, allowing no shake in the parts. It can be seen by any one, mechanic or not, that cycle parts must travel in the course intended, and avoid the slightest deviation from that track.

To accomplish these results many devices have been tried, and hundreds of patents taken out in this country and Europe. In 1877 there was patented to William Bown, of England, the invention of Joseph Henry Hughes, which promised to fulfill all the requirements of a perfectly adjustable ball

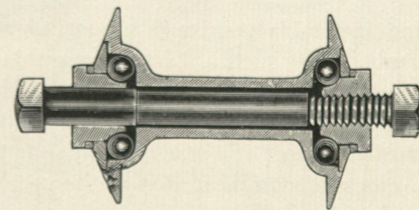


FIG. 5—SECTIONAL VIEW OF SMALL HUB.

bearing for cycles, and it is needless to say that the invention was warmly welcomed by all riders, while many makers and inventors attempted to find a method by which they could evade the claims of this patent, and at the same time accomplish practically the same results. After thirteen years, during which time hundreds of other plans have been tried and much litigation had in the courts with those who have attempted to appropriate the device, the Bown patent to-day is stronger than ever, and the methods used therein acknowledged by all fair minds to be the only ones



by which a practical cycle bearing can be made. It is a fact, today, that no other bearing is succeeding, and that all modifications of this bearing which have any practicability are paying a royalty for the use of this patent, and their makers are only introducing modifications in order to claim an individual bearing. The principal makers of the world pay tribute to this invention. In 1884 we purchased of Mr. Bown the United States patent for this invention, and have since been exclusive owners. We are therefore owners of the principal patent which bears upon cycle-making. In the Victor Safety and Light Roadster there are no bearings except ball bearings. As we believe these essential, we use nothing else. The illustrations will show the very simple and perfect method for adjustment used in Bown's ball bearings.

Makers who are not licensed to use this patent have adopted the old-fashioned and long abandoned method of making the lower half of the ball case movable toward the upper half, in order to compensate for wear of balls and cases. This is purely a make-shift to avoid the expense of a license under the Bown patent,

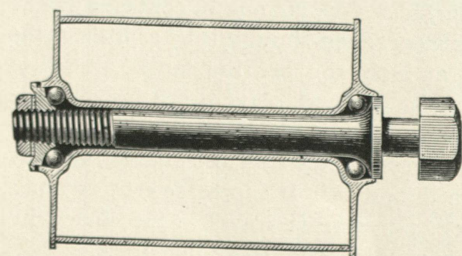


FIG. 6—SECTIONAL VIEW OF PEDAL, SHOWING BALL BEARINGS.

and inevitably results in a bearing worn to an ellipse and out of true. While such a bearing would appear right when new, it would immediately wear into a wobble fit, making a rattling machine with loose joints. The joints in the body of the case are another defect in such bearings, as the balls in running over the joints will soon dent down the edges and make a chuck hole in each side of the case. Riders who, from lack of mechanical knowledge, buy such machines, will repent when they have learned by experience that the only way to adjust a circular row of balls is by means of a cap screwing up from the side in such a way as to bear equally on all balls.

The production of steel balls for cycle bearings is of itself an art, each ball having an infinite number of diameters, which must be the same if the ball is round, and it must be round. An idea of the nicety of the calculation necessary in making these balls may be had from the fact that they are gauged to  $\frac{1}{40000}$  part of an inch. We own and operate a complete plant of the best



known ball machinery, making all of our own balls. By our methods we are able to insure uniformity in size and quality and produce balls that cannot be surpassed. These are known as Æolus balls, and riders are cautioned to use no others in Victor bearings, and to obtain them of us or responsible agents, as it would be impossible for riders to detect the minute differences without the use of micrometers. Heretofore, in replacing a ball, the bearing has, almost invariably, been thrown out of true by the introduction of a ball of different size. It is apparent that if one ball is  $\frac{1}{1000}$  of an inch larger than its fellows this one ball will take all the strain until it has plowed a furrow in the case or is itself crushed. In either case the bearing is ruined.

The sizes used are as follows: In pedals and Safety head bearings  $187\frac{1}{2}$  one-thousandths. In front and rear wheels and Safety crank bearings  $312\frac{1}{2}$  one-thousandths.

The Æolus balls are rolled, instead of being turned as are many of the balls now on the market. It is impossible to use the highest grade steel in a turned ball. A low grade steel must be used, since it is evident that a cutting tool can only cut material which is much softer than the material of which the tool itself is made. Turned balls cannot be made of tool steel. Nothing else is used in the Æolus balls.

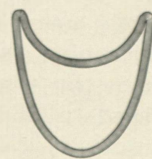


FIG. 7— $\frac{5}{8}$  INCH.

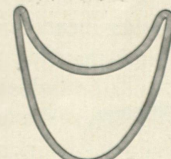


FIG. 8— $\frac{3}{4}$  INCH.

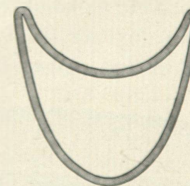


FIG. 9— $\frac{7}{8}$  INCH.

SECTIONAL VIEWS OF VICTOR TUBULAR RIMS.

We were the first American makers to manufacture hollow rims, and, after years of experience with the various kinds, have adopted the method of rolling them from weldless steel tubes, which in our opinion produces the best rim that can be made. It is of course far more expensive than any other rim, but is, in every way, better. The rim is so shaped as to give the greatest possible strength, and a washer is introduced in the bottom to serve as a seat for the nipple, preventing it from bedding or necking into the rim hole.

As we do not use cement with our compressed tires, we do not



have to provide storage room in the rim for the wax; and as our method of attaching is positive, and does not depend on the amount of contact between rim and rubber, we are able to

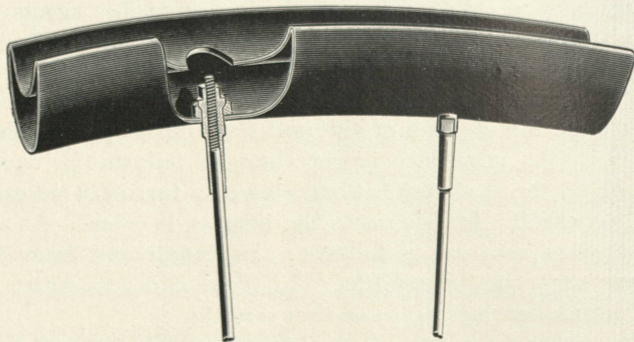


FIG. 10—SECTIONAL VIEW OF RIM, SHOWING ARRANGEMENT OF NIPPLE, WASHER, ETC.

make a very shallow rim, which, while most of its advantages accrue to the tire, possesses this advantage for the rim—that being very shallow, it has great lateral strength.

By the use of this rim, and the combination with it of the tangent spoke, we produce a wheel which it will be found simply impossible to buckle.

No feature in wheel-making bears more directly upon the comfort and safety of rider and machine than the rubber band which encircles the wheel.

We are indebted to rubber for our enjoyment of cycling. The requirements of a tire are, first, elasticity; second, durability; third, perfect attachment to the wheel.

The elasticity of rubber depends upon displacement. Rubber is as dense as iron when confined, but thoroughly elastic when allowed room for displacement. Tires, as heretofore made, have been one-half outside, unconfined, and therefore elastic, one-half inside, and confined, therefore inelastic—the inner half of the tire serving only for the purpose of attaching the rubber to the rim, thus contributing almost nothing to the elasticity of the tire, so that for this purpose it might as well be made of wood or leather.

As stated under the head of rims, we do not depend upon the

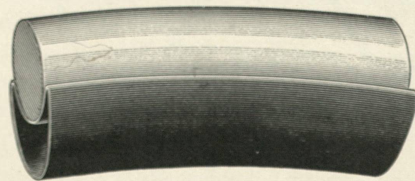


FIG. 11—VICTOR RIM WITH TIRE.



amount of contact between rubber and rim, in attaching tires, so that we make the tire-chamber of our rim exceedingly shallow, thus exposing, and consequently rendering useful, a much greater proportion of the tire than is exposed by any other method.

The elasticity of our seven-eighths inch tire is equal to a one and one-eighth inch tire attached by cement. Durability of the tire is insured by our compressed method, as we do not stretch the rubber, but use a tire larger than the wheel, and compress it into the rim by means of clamping machinery. A tire which is stretched into the rim tears open at every cut, soon becoming ragged and ruined by contact with the stones and uneven surfaces of the roads, while cuts in compressed tires close up and do not enlarge. Rubber, when compressed, is far less easily cut, the tendency being to temporarily dent the rubber, instead of cutting into it, as is the case in a stretched rubber, which resists pressure. We claim that the Victor compressed tire will wear twice as long as the ordinary stretched tire fastened with cement.

If the tire is attached in such a way that it can be pulled out (which means that it can come out on the road) it is not useful, but dangerous. We are the only makers in the world who guarantee tires to stay in, and who invite the public to pull them out if they can. Our tires will be torn to pieces, bit by bit, before they will part from the rim. We use no cement, but by a chemical process, which admits of the tire being easily taken out to replace spokes, we attach the rubber directly to the rim.

This tire is so good that competitors have found it necessary to invent objections to it, and the report has been circulated that Victor wheels must be returned to the factory to have a spoke replaced. This found credence with some riders, because they were unable to force the tires out, and were not aware of the fact that by the application of heat to the rim, though in no other way, Victor tires may be quickly and easily detached, and perfectly replaced. [Full particulars sent on application.] It is not necessary to take the tire out in order to replace or alter the tension of a spoke. By means of a nipple grip [by mail, sixty cents] the nipples can be turned to replace a spoke, thus leaving the tire undisturbed.

The Victor compressed tire cannot be appreciated without mounting the wheel. The "compressed tire" differs from others in these respects only: first, it is a pure Para gum rubber; second, it is not stretched, as all others are, but is made larger than



the rim, and compressed into the rim; third, it is attached without wax, or tire cement, by a chemical process, uniting the rubber directly with the rim. The compressed tire originated with us, and is controlled by us. Our price for compressing tires into the wheels of other bicycles is ten dollars a pair. We therefore consider that the Victor bicycle is worth ten dollars more than the same machine would be with cemented tires.

One of the departments of our factory is a thoroughly equipped laboratory, in which the chemical part of our tire process is performed, together with all other chemical processes and manufactures of the company.

This laboratory is in charge of a professional chemist; therefore the best results are assured.

### PRICES.

Regarding prices we beg to inform the public that Victor bicycles are sold at the prices mentioned in this list, and no discounts can be made from them. The fact that machines can be bought at almost any price does not in any way govern the disposition of our product. Our construction, using, as we do, the best in every case, is necessarily so expensive that we cannot sell for less than the prices named. It will be found that our agents uniformly decline, as do we, to make any concession in the matter of prices. That we are able to dispose of our product on this basis, while other dealers make various inducements aside from the quality of their goods, proves conclusively the merits of the Victors.

### SUGGESTIONS.

TERMS, NET CASH WITH ORDER.

WHEN GOODS ARE ORDERED C. O. D. A SUFFICIENT AMOUNT TO PAY CARRIAGE BOTH WAYS MUST BE SENT WITH ORDER.

WE MAKE NO CHARGE FOR CASES OR CARTAGE.

WE MAKE NO DEVIATION FROM OUR LIST PRICES.

WE DELIVER ALL GOODS F. O. B. AT CHICOPEE FALLS, MASS., WHEN OUR RESPONSIBILITY FOR SAFE DELIVERY CEASES.

NO GOODS SHOULD BE SHIPPED TO US WITHOUT FIRST OBTAINING OUR INSTRUCTIONS.



## "INTERCHANGEABLE."

RIDERS cannot place too much importance upon having the machine they select *INTERCHANGEABLE*. If the parts are not made interchangeable, it means that when a repair is made each part will *have to be fitted*, and the machine when repaired will be a *patched-up affair*, and the rider's pocket will need to be patched.

The expense of special fitting is always heavy and generally unsatisfactory. Remember the question is not whether you can *fit* the parts of a machine which you propose to ride; it is, *will the parts invariably fit without the slightest alteration?*

We believe there is not more than one make of bicycles in the world, besides the Victor, which is made interchangeable. Many makers claim this feature, but without right to do so. *We guarantee our machines to be interchangeable throughout and will replace any piece which will not fit without alteration.*

If you break a Victor bicycle and replace the part it will be *exactly new* at that point, and not a cobbled-up, ill-fitted trap.

If a certain part (say the crank) in ten machines of the same pattern is fitted in ten different ways—as must result by hand-work—it is evident that at least nine out of the ten *are wrong*,—*i. e.*, they cannot all be different and all be right.

When made interchangeable, parts, being all made by the same dies and cutters, and finished to the *same gauges*, *must be alike*.

"Things which are equal to the same thing are equal to each other."

### "ASK VICTOR RIDERS."

This is often our advice to those who are inquiring: Ask Victor riders how their machines run, how they climb hills, how they coast,—in short, how they behave in all-around use.

We have printed in pamphlet form what "Half a Hundred of them" say. Copies will be freely furnished on application to us direct, or to Victor agents.

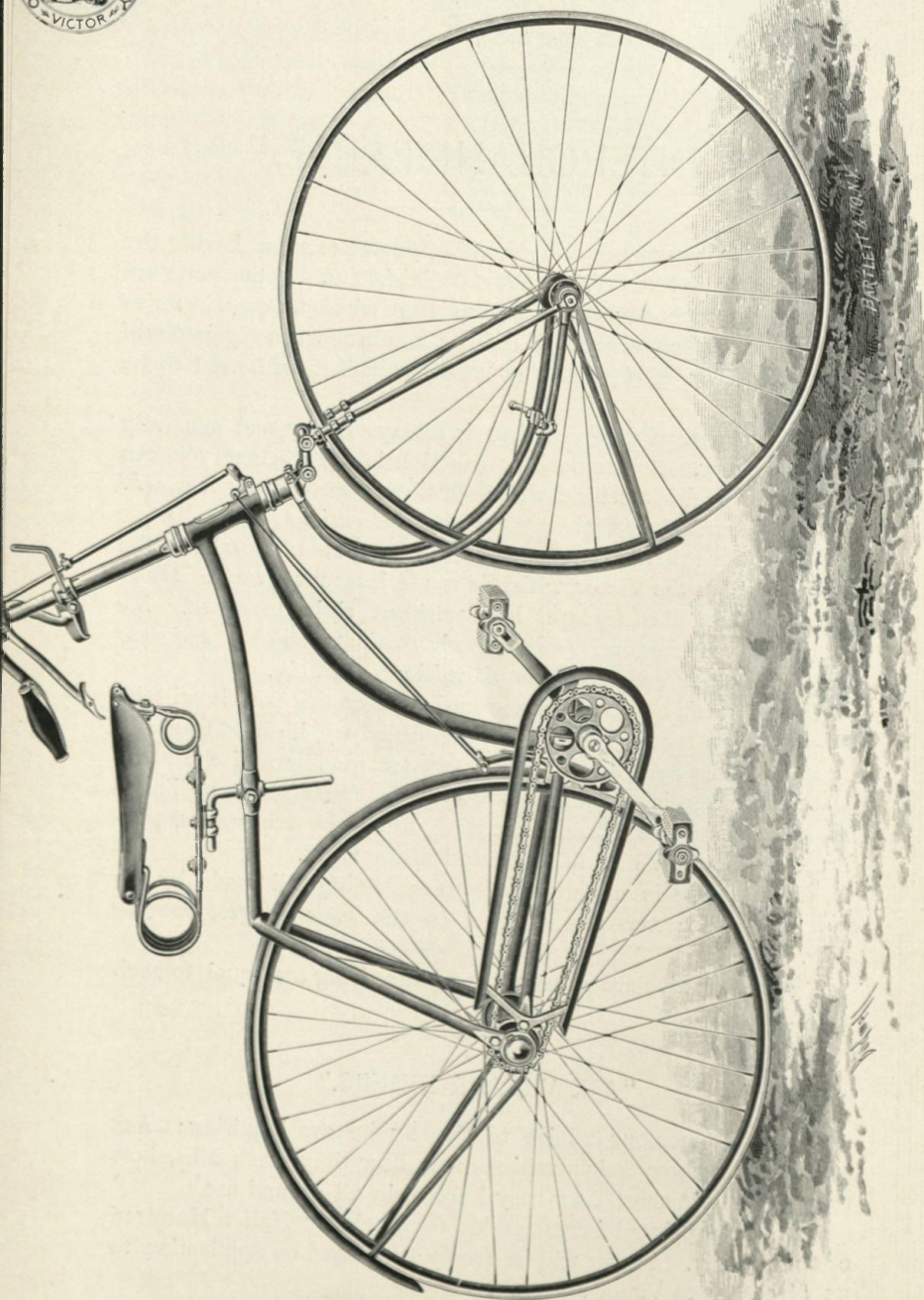


FIG. 11.—VICTOR SAFETY BICYCLE.



## THE VICTOR SAFETY BICYCLE.

Four years ago what is known as the Rover type safety came into general use in Europe.

To-day this machine has almost superseded all other types, having been found to possess a rare combination of good qualities.

As we were the first American makers to build such machines and have built more of them than any other American maker, we are very sure that we are in better position to supply just what is desired than our neighbors of more limited experience.

Our machine has been steadily improved from year to year in many ways, and the model for 1890 represents the summing up of our years of experience beside having the benefit of our very



FIG. 13—VICTOR SPRING FORK.

exceptional facilities for manufacture. The Victor Safety has been so successful that our orders have been constantly in excess of the supply.



As fast as any, absolutely safe, and well adapted for night and rough riding, it is a successful combination of qualities long desired. Men, old and young, have found it a tractable and profitable steed, and it has delighted and captivated those who had formerly held aloof from cycling. This machine, like most of our products, differs from all others. It is one of the articles of our faith never to make blind copies.

It was ours to first recognize the necessity of a spring fork to absorb vibration, for the benefit of both rider and machine, and the Victor spring fork has been applied to all the safety bicycles we have ever built, and has proved a feature of the utmost value.

Many are the imitations with which it has been attempted to produce the results given by the Victor Safety, but all in vain. Like all imitations they have fallen far short of the original.

As the wheels are small the vibration is great, and in studying this type of machine as made abroad we were convinced that it would require a front fork so constructed as to absorb this vibration, and thus, in effect, carry its own good road with it. We therefore purchased the principal patents bearing on such devices, and set about determining the best method of accomplishing the desired end. The result of our experimenting was the spring fork as now used in the Victor Safety.

It is now in its fourth year of active service and each season's use has added to the enthusiasm of all who use it. The best indorsement of our theories is to be found in the fact that makers who have been arguing against the Victor spring fork ever since its appearance, and insisting that the old rigid fork was best, are now trying to get the benefit of the spring fork by the use of various kinds of springs which they claim will give the same results.

The Victor spring fork has revolutionized the safety bicycle, and riders may rest assured that the different devices which are claimed to be as good as the Victor spring fork are but poor excuses for the original and best.

One method of absorbing vibration is to enlarge the front wheel. This makes a heavier and clumsier machine, and with an efficient spring fork is entirely unnecessary.

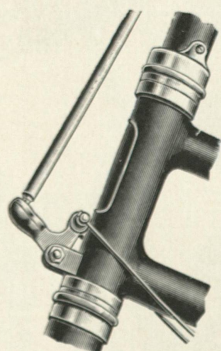


FIG. 14—  
VICTOR SAFETY HEAD.



An even flexibility throughout the entire range of the spring is demanded, and it is our opinion that the Victor spring fork is the only device which will give such action.

From riders of the Victor Safety but one opinion will be heard, and that indorsing the spring fork as the very soul of a safety.

To those who have not ridden this machine, and must select more or less upon theory, we would suggest the comparison of a ride over a rough road in a wagon with springs and in a wagon without springs. The difference in cycles will be even greater.

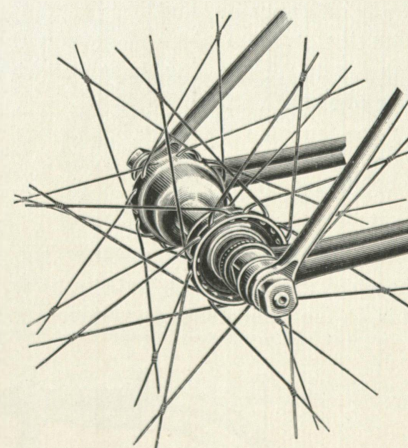


FIG. 15—SAFETY FRONT HUB, SHOWING  
ARRANGEMENT OF SPOKES, ETC.

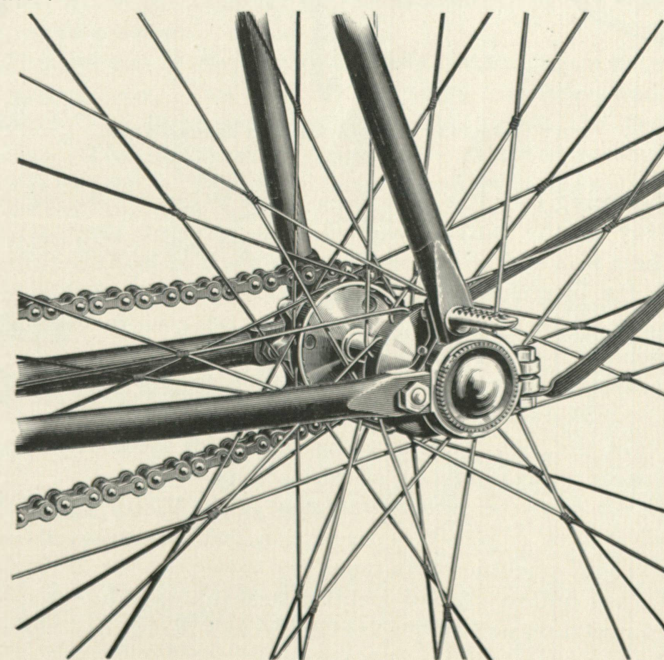


FIG. 16—SAFETY REAR HUB.

Note that the bearing is outside of the chain and not in the hub of the wheel, so that the power is applied between the two supported ends of the axle.



The effect of this device is felt, not only by the rider, but by the machine in every part, as the spring fork cushions the blow of any obstruction, and prevents injury to the machine. To illustrate this, strike a piece of glass with a tack hammer; a light blow shatters it. Face the hammer with rubber and a heavy blow does not crack it.

The spring fork contributes not only to the ease and durability of the machine, but also to its speed, as, when an obstruction is met with, it takes the force of the blow, and, instead of the machine being rigidly checked, it rolls softly over the obstruction. This accounts for the fact, established by many trials, that a Victor Safety will out-coast safeties with rigid forks. It is, in fact, the fastest coaster known.

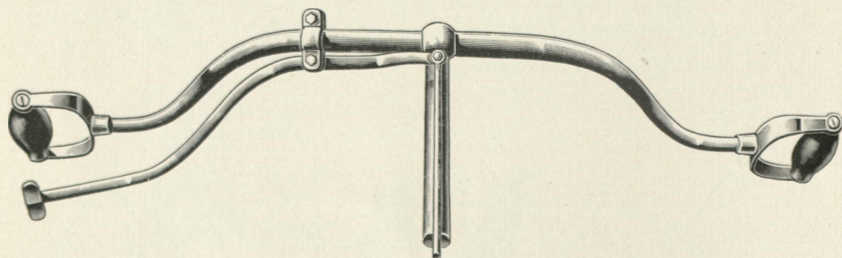


FIG. 17—SAFETY HANDLE-BAR AND BRAKE LEVER.

The spring fork has also been found to favor hill-climbing.

Many of the hotly contested road races of the past year have been won on Victor Safeties. The machine is made throughout on the interchangeable plan, and is in every way as good as can be made. It is made entirely in our own factory, where the problem is not to cheapen but to perfect.

For instance, we have not undertaken to cheapen this machine, as most makers have, by the use of solid rims, direct spokes, cast hubs, etc., but have introduced all high grade features, as will appear on examination of the machine.

We are ready to demonstrate, that in the Victor Safety there is used a more expensive construction than is employed in any other known machine of its type.

We use hollow rims of weldless steel tubing, tangent spokes, forged steel hubs and all bearings are Bown's Æolus ball bearings, which are perfectly adjustable for wear.

The Victor Safety runs on 176 steel balls, more than are used



in any other bicycle. The head bearings alone contain forty-four balls, so arranged as to form the best and most perfectly adjustable steering head in the market.

The spring fork is composed of four steel rods, made of the steel used in the finest sword blades. Its flexibility depends on 9 feet of steel rods. As the spring comes from an equal strain on so great an area, it will be seen that breakage is almost impossible. Even our competitors have ceased to circulate the statement that the springs were liable to break, four years' use having demonstrated that they do not break.

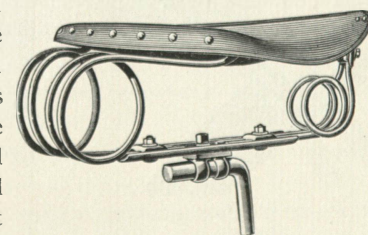


FIG. 18—VICTOR SAFETY SADDLE AND SPRING (DETACHABLE LEATHER).

In such a device spring is wanted in two directions; first, and most, vertically; second, fore and aft. For both of these we provide perfectly. Lateral motion is avoided by the stay rods and rocking beam.

The amount of spring will naturally depend upon the size of the spring rods. Two sizes are furnished, for heavy and light springs. The light spring will be sent unless the heavy is ordered. The light spring is suitable for riders of not over 150 pounds weight. The rocking beam bearings of the spring fork are all ball bearings, made adjustable, the rocking beam containing forty balls. See Fig. 20.

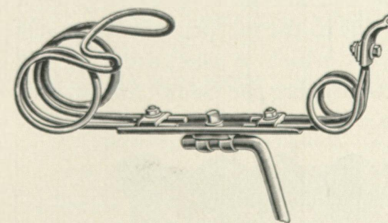


FIG. 19—SAME AS FIG. 18 WITH LEATHER OFF.

The Victor Safety saddle is entirely of forged steel, all nickel plated. It is adjustable in either direction, fore and aft, up and down. The leather seat is easily detachable. It is done instantly and without the use of tools. This is a very important item, and is the only practical method by

which a rider can avoid the use of a wet saddle, which is not only bad for his health but injures the saddle as well, as a leather when wet will easily stretch out of shape. Also by detaching the leather when not in use the machine is locked and safe from both theft and meddling.

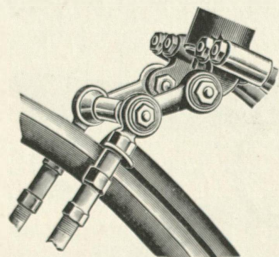


FIG. 20—SPRING FORK ROCKING BEAM.

Crankers are made with two holes, instead of slots. (See Fig. 21.) This is a very expensive construction, as it costs twice as much to broach out two holes as one, and broaching is expensive work. We do this, because, as the pedal pin exactly fills the oval hole in which it may be set, the strain is thrown on the crank, which is stronger and better able to stand it than the pedal-pin itself, and also in order to insure uniformity of throw, as by observation we find that where riders use a slotted crank, they set the pedals by guess, and almost invariably are found to use longer reach on one side than on the other. This breaks the rhythm of the pedaling. If riders differ from us in this theory, they have only to file out the web between the holes, and have the old-fashioned slotted crank.

The throws of the regular safety crank are  $6\frac{1}{4}$  and  $6\frac{3}{4}$  inches, though shorter cranks (5 and  $5\frac{3}{4}$  inches, as used on the Victor Light Roadster) will be supplied if desired. Cranks are keyed with round taper pins.

Our square rubber ball pedals (see Fig. 34) have during past years continued to grow in favor, and are more generally used than ever. Their great success is due to the feature of automatic adjustment to the curve of the foot, which is the result of the square rubber used. This prevents slipping the pedal, and makes the square rubber pedal as safe as a rat trap, without its discom-

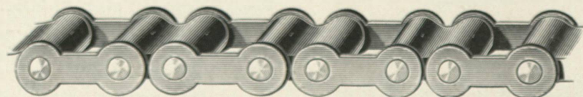


FIG. 22—VICTOR CHAIN.

forts. All Victor bicycles are furnished with square rubber pedals. We were the originators of this class of pedals, and are the only makers who present this device with none of its merits omitted.

Both wheels are 30 inches in diameter, the front wheel having

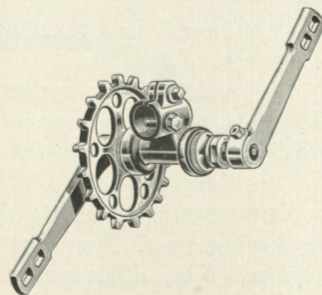


FIG. 21—SAFETY CRANK HANGER AND CRANKS.



$\frac{5}{8}$  inch rim and tire and the rear wheel  $\frac{3}{4}$  inch, but  $\frac{3}{8}$  inch front and  $\frac{7}{8}$  inch rear will be furnished without extra cost when desired.

Our spokes are distinctly different from others. They are made by needle machinery—a very expensive method but the only one which insures against defects. We use wire stock of the size of the enlarged head and draw it down to the body size of the spoke, thus avoiding the many defects caused by simply upsetting the end of the wire, as is commonly done. (See cut.) The wire for these spokes is made specially for us and is of the best quality known.

To avoid the difficulties which arise from spokes rusting in the nipples we have adopted a hard bronze nipple, made very long in order to prevent breakage in the thread. (See cut.)

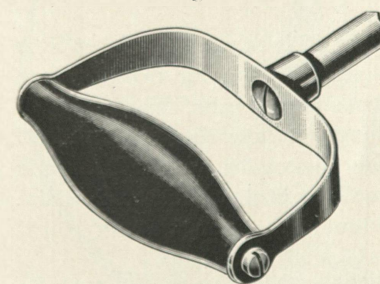


FIG. 23—BUTT END OF SAFETY SPOKE (TAPERED).



FIG. 24—SAFETY NIPPLE, FULL SIZE.

Spade handles are used, as they have proved most acceptable to riders.

The chain is all forged steel and made to gauge throughout, each chain being tested to 1800 pounds, and lubricated for two months' wear.

*A better chain cannot be made.* (See cut.)

FIG. 25—VICTOR SPADE HANDLE.

Chain sprocket wheels are of hardened forged steel.

The foot rests and lamp bracket are also of forged steel.

Handle-bars, cranks, pedals, hubs, saddle posts and springs, spokes to first tie, and all small parts, such as bolts, nuts, etc., are nicked; all other parts finished in Victor Enamel.

Geared to 51, 54, 57, or 60 inch. Will be sent geared to 54 unless otherwise ordered.

Price, crated, f. o. b. Chicopee Falls, Mass., with tool bag, wrench, spring top oiler, and screw driver, \$135.00.

See Guarantee, page 20. See Interchangeable.

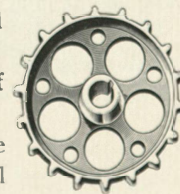


FIG. 26—VICTOR SPROCKET WHEEL.



## THE VICTORIA SAFETY BICYCLE.

READY MAY 1.

THIS machine, now in rapid process of construction, is designed to meet the requirements of ladies, light weight men, and boys who want a strictly high grade machine of lighter weight than the Victor Safety.

It can be very quickly described to the satisfaction of those who are familiar with the Victor Safety, as its features will be unmistakably "Victor," and in no respect will it be inferior to our best production.

Briefly it will be built as follows: 28 inch wheels with  $\frac{5}{8}$  inch rim and tire to front and  $\frac{3}{4}$  inch to rear, having hollow rims, tangent spokes, and compressed tires. Single tube, drop frame of  $1\frac{1}{2}$  inch 15 gauge weldless steel tubing, Victor spring fork, all ball bearings, Victor saddle and spring (specially adapted), spade handles, square rubber pedals, guards to both wheels and chain.

It will be as light as is consistent with strength and durability. Weight about 44 pounds. Geared to 50 inch.

Fine cabinet photograph of this machine will be mailed on receipt of 15 cents.

Price, f. o. b. Chicopee Falls, Mass., crated, and with tool bag and all necessary tools, \$135.00.

See our Guarantee. See Interchangeable.

### GUARANTEE.

OUR MACHINES ARE GUARANTEED TO BE FREE FROM IMPERFECTIONS IN MATERIAL OR WORKMANSHIP, AND WE WILL REPLACE WITHOUT CHARGE ANY PARTS RETURNED WITHIN A YEAR FROM PURCHASE OF THE MACHINE WHICH GIVE EVIDENCE OF SUCH IMPERFECTION.



## THE VICTOR LIGHT ROADSTER BICYCLE.

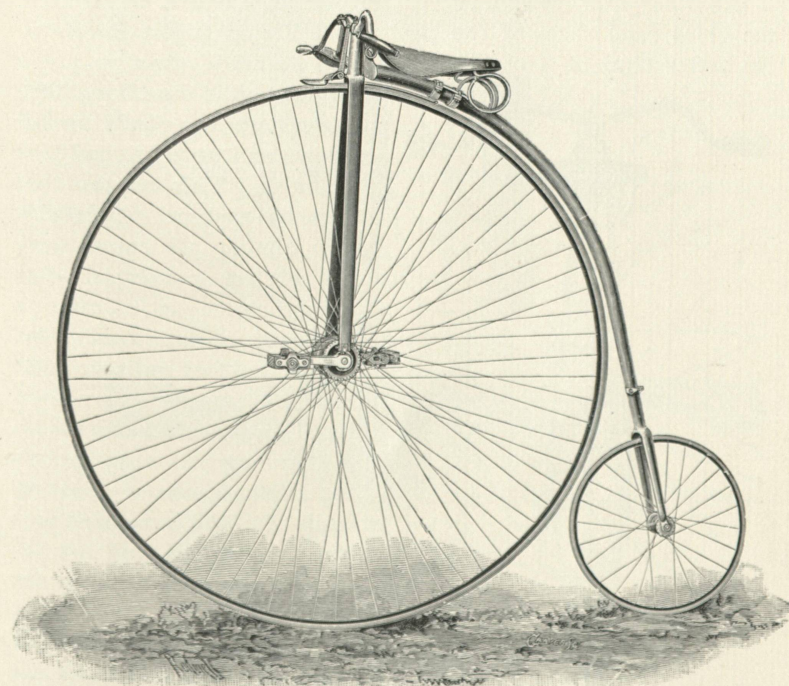


FIG. 27—VICTOR LIGHT ROADSTER.

THIS machine has the distinction of having been the first high grade bicycle made in America. By this we mean that it was the first American bicycle to be placed on the general market with hollow rims, tangent spokes, and made entirely of forged steel. It was also the first machine to be furnished with a suspension saddle, and the Victor Saddle, practically unchanged, still remains the most popular in use. The Victor bicycle was placed upon the market at \$125.00 for a 50 inch.

To-day the price remains the same, and no substantial variation has been made in the features of the machine.



Among old riders it will not be necessary for us to enlarge upon its merits. Where hills have been climbed, where great road races have been run, where wheels have been tested to their very utmost, the Victor has been found at the front to tell its own story. It has won for itself a name second to none, and we but echo the claims of its riders when we say that it is entitled to stand at the head.

No other machine has given so good an account of itself in the great road races of the past as the Victor Light Roadster. No better trial of a road machine can be made than to put a

strong man on it for a long hard pull over common roads up hill and down and note its condition at the finish. This is a test that Victors have stood repeatedly and in almost all cases have shown perfect condition after winning the race—not a nut or a bolt started. That a machine can be ridden fast indicates that it runs easily, which argues good material and perfect workmanship. Among its many points of superiority those of coasting and hill-climbing have been particularly remarked, and are indicative of the perfection of the "lines" of the machine. If a bicycle coasts well it shows that the parts are well fitted and the bearings true, and the only time to appreciate this is when the power is taken off; then the machine itself has a chance to talk, and it tells unerringly what the work is. The Victor has gained the reputation of being a coaster *par excellence*,

and Victor riders have challenged all comers with success.

No greater strain is put upon a machine than in hill-climbing, and not only is it a test of the durability of the work, but it is also a test of the running quality. A clumsy machine is a hard

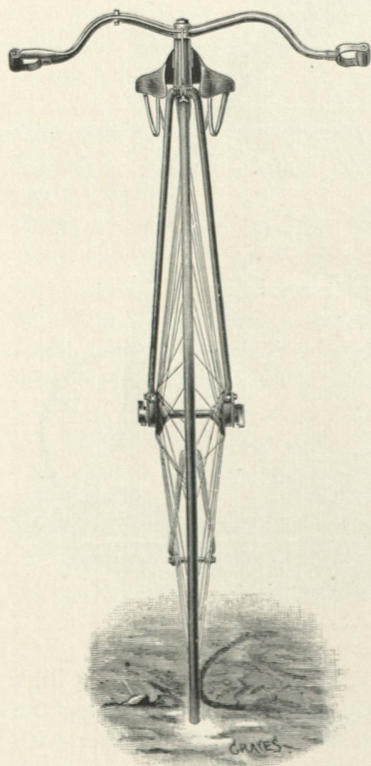


FIG. 28—FRONT VIEW VICTOR LIGHT ROADSTER.

hill-climber. Ask any Victor rider how his machine coasts and how it climbs hills.

We want to be understood to say that the Victor Light Roadster contains absolutely no cast metal, and the machine is so guaranteed. The cheap way to make parts is to use a wooden pattern, and from it have castings made. The expensive way, and the way which we have adopted, is to make steel dies for each piece and forge the pieces from steel, thus insuring accurate form without the tendency to flaws incidental to castings.

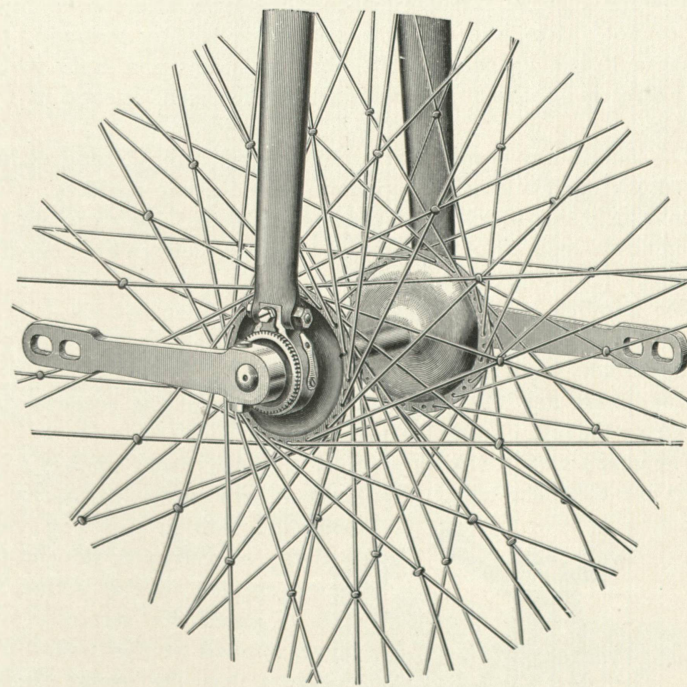


FIG. 29—LIGHT ROADSTER FRONT HUB, WITH CRANKS, ETC.

Spines are of inch-and-a-half weldless steel tubing—a large section, to give rigidity and strength. The rear fork is made straight instead of curving back, in order to carry the step a proper distance from the front wheel.

The front forks are of weldless steel tubing, with closed, dust-proof head. The ball bearing case is attached to the fork, so that the fork rests directly on a shoulder each side of the ball bearing case.





The front wheel hubs have flanges pinned to the axle and brazed to a shoulder, thus making it absolutely impossible to loosen the axle in the flanges. The small hub is one solid steel forging, making it very light and strong. Felt washers are used on this to make bearings dust-proof. (See Figs. 5 and 29.)

In small matters as well as large the critic of the Victor Light Roadster will find that vigilance has been shown in consulting the needs of riders. Heretofore dust shields have rattled, and there has been no means of oiling the lower step in the steering head. Our dust shields are attached rigidly to the swivel head, and cannot rattle, and the lower step is oiled by throwing the backbone to the extreme right, thus opening up a hole which leads directly to the lower step, which is closed except in this position.

The handle-bar is made of weldless steel tubing, tapered and curved, giving it a graceful appearance and great rigidity. The tip to which the handle is attached is formed by drawing the tubing down, instead of attaching a separate piece, which is liable to break. (See Figs. 25 and 30.)

The handles are of black vulcanized rubber, which will be found very strong. The spade handle is used, as it is the one most generally demanded.

Our spokes are true tangent, which is one of the reasons why the Victor bicycle climbs hills so easily.

The cheap way to make a wheel is to use direct spokes; but this is not the best way. Spokes have two uses,—primarily, to

hold the hub in position; secondarily, to convey to the rim the power applied to the pedal. If it is to stand the strain of the power applied at the pedal, is it not best that the spoke should lie in the direction of the strain?

Much could be written on this point—too much that is not to the point has been said. To demonstrate the difference between tangent and direct spokes, stand at arm's length from a man, face to face with him, and hook

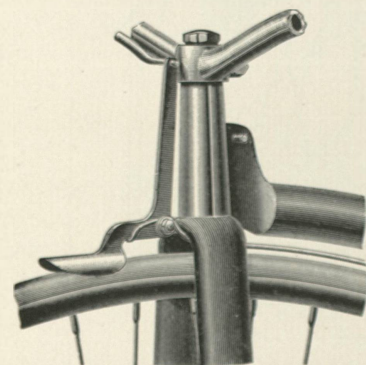


FIG. 30—LIGHT ROADSTER HEAD.

your forefinger into the front of his vest around a button. In this position consider him as representing a hub, and your arm a



spoke. Now let him attempt to turn his back to you. It will be observed that he can turn with perfect ease until the relative position of your arm to his body becomes the same as that of a tangent spoke to the hub of a wheel. At this point his progress is arrested, and you hold him easily.

Again, take the average number of direct spokes in a wheel—say fifty—and fasten one end of the bundle in a vise. Take hold of the free end and push it sidewise. With one hand you can bend them double. Note the fact that their combined lateral strength is fifty times that of a single spoke. Then fasten one spoke in the vise and pull directly endwise on it. Fifty men could not break it, because it pulls tangent, or in the direction of the strain. In using direct spokes a large part of the work consists in twisting the hub around until the spokes begin to pull tangent. In using tangent spokes the power applied to the pedals is communicated directly to the periphery of the wheel.

In all wheels fifty-four inch and under we use seventy-two spokes; fifty-six inch and above, eighty spokes. We think it well to have plenty of spokes. Small wheels all have twenty-four spokes. All spokes are tied with steel wires at each crossing and soldered, and attached at the rim by means of long nipples, having fifty-six threads to the inch, and counter-bored, so that the strain on the spoke will not come on the thread, but on the full sized wire. (See Figs. 29 and 30.)

The steering head is made with hardened steel cones, polished as smooth as glass, and so fitted that they can be easily oiled. This makes the easiest working and most serviceable head. We do not believe in a ball head for regular bicycles. It introduces complication and multiplicity of parts, and weakens not only the head, but the swivel. The motion at this point will not average more than one-fifth

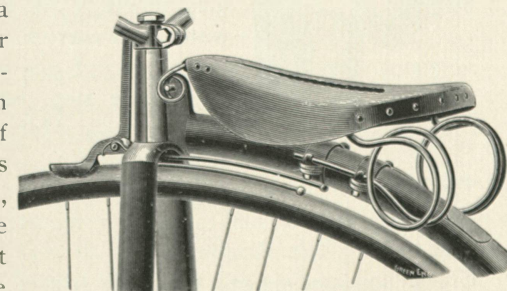


FIG. 31—VICTOR SWING SADDLE.

of a circle, consequently the balls are worn in spots only, and are not constantly trued by complete revolutions, as in ball bearings in other parts of the machine.



Though the best ball bearing heads are not controlled by patents, they are not used by any of the principal makers.

The saddle is the connecting link between the rider and the ridden, and if not entirely right will be a constant source of discomfort. The Victor Saddle is entirely right, and shows more good points than any other.

The jar of the machine wears itself away in passing through the long coils of the spring, and by its peculiar construction it has a fore-and-aft swing which cushions the jar that might otherwise cause a header.

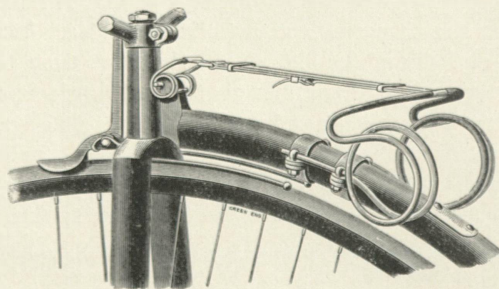


FIG. 32—VICTOR SWING SADDLE WITH LEATHER OFF.

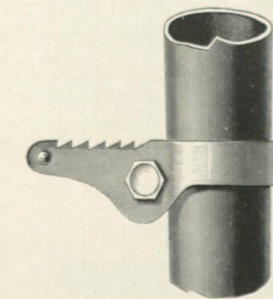


FIG. 33—LIGHT ROADSTER STEP.

The leather seat of the saddle is as easily put on and off as one's hat—it can be taken off at every stop, thus keeping the seat dry, and effectually locking the machine, as it cannot be ridden without the saddle. Also, its construction admits of any required tension. It leaves little to be desired in a saddle. Its merits are attested by the numerous inferior copies placed upon the market.

Our experience has taught us that bicycle steps are wanted and are not wanted, in a great variety of ways. We therefore put on our machine a light, adjustable step, which can be placed wherever the rider wishes, or, better still, left off entirely.

The teeth, which prevent the slipping of the foot from the step, are carefully turned in to avoid the possibility of their catching and tearing the clothing.

Cranks and pedals are the same as used in the Victor Safety, and are described under that head.

We make two finishes—Standard, with spokes, rims, back-bone, and fork sides in Victor black enamel, and all other parts nicked on copper. Extra, all nicked on copper, except rims and spokes, which are finished in Victor enamel. For this latter



finish we charge ten dollars per machine extra. Forged steel is hardest and stiffest on the outside, and since the metal is not thick enough to admit of grinding off to polish for nickel-plating, we hold that hollow rims and tangent spokes should never be nickel-plated, not only for this reason, but because it is almost impossible to clean them, which is necessary when they are nickel-plated, in order to prevent rusting.

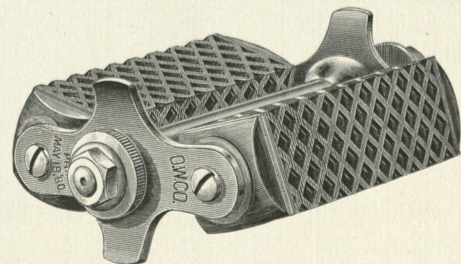


FIG. 34—VICTOR SQUARE RUBBER PEDAL.

For description of Victor enamel, see page 28.

With regard to weights, the fifty-inch Victor Light Roadster with saddle and pedals on, ready to ride, weighs about 38 pounds. Other sizes in proportion.

We consider these weights as light as it is safe to make for American roads, and while the machines are light they are so strong and rigid that we do not bespeak for them light riders and good roads. They are built for use on the average American road, and will be found thoroughly stanch and reliable.

See our guarantee on page 20. See testimonials.

#### LEG MEASURE.

|             |   |   |                |             |   |   |                |
|-------------|---|---|----------------|-------------|---|---|----------------|
| 32-inch leg | . | . | 48-inch wheel. | 36-inch leg | . | . | 56-inch wheel. |
| 33-inch leg | . | . | 50-inch wheel. | 37-inch leg | . | . | 58-inch wheel. |
| 34-inch leg | . | . | 52-inch wheel. | 38-inch leg | . | . | 60-inch wheel. |
| 35-inch leg | . | . | 54-inch wheel. |             |   |   |                |

These are standard figures for measurement. The rule should be to ride as small a machine as fits well. The Victor being closely built and having a low saddle, a larger wheel can be used than of some other makes.

#### SUMMARY OF POINTS IN VICTOR LIGHT ROADSTER.

ALL FORGED STEEL—Not one ounce of cast metal.

TIRES—Finest Para gum, compressed in.

BEARINGS—Bown's Æolus Ball, all round, including pedals.

SADDLE—Victor Swing, detachable leather.

RIMS—Hollow, new shallow section, very stiff.



HANDLE-BARS—Weldless steel tubing, cow-horn shape, and tapered to tips; detachable.

SPOKES—True tangent, tied and soldered at all crossings, attached with long tube nipples.

FORKS AND SPINE—Weldless steel tubing, of thin gauge and large section.

STEP—Detachable and adjustable.

DUST SHIELD—Perfectly tight, with means for oiling.

HANDLES—Vulcanite, spade pattern; adjustable to any angle.

#### PRICES OF VICTOR LIGHT ROADSTER BICYCLES.

|                                                                            |          |
|----------------------------------------------------------------------------|----------|
| 48-inch, all nickel on copper, except fork-sides, spines, rims, and spokes | \$122 50 |
| 50-inch, " " " " " "                                                       | 125 00   |
| 52-inch, " " " " " "                                                       | 127 50   |
| 54-inch, " " " " " "                                                       | 130 00   |
| 56-inch, " " " " " "                                                       | 132 50   |
| 58-inch, " " " " " "                                                       | 135 00   |
| 60-inch, " " " " " "                                                       | 137 50   |

All have spade handles and ball pedals. *No extras.*

Nickel finish, all nickel except rims and spokes, \$10 additional.

The above prices are for the machine complete, crated and delivered f. o. b. at Chicopee Falls, Mass., with nickeled B. & S. wrench, nickeled spring top oiler, tool bag and tools for adjusting head. Each item is of the very best and most expensive. See Interchangeable, page 11.

#### VICTOR ENAMEL.

Victor Enamel is the result of several years of careful experiment and improvement.

We believe this to be far better than any other. It is hard, tough, cannot be affected by the weather, and gives a beautiful finish.

We are now able to make the following very low prices for re-enameing:—

|             |        |
|-------------|--------|
| Large wheel | \$3 50 |
| Small " "   | 1 50   |
| Backbone    | 1 75   |
| Fork        | 1 25   |

We also quote the following prices for completely re-finishing Victor bicycles, except re-nickeling hubs, which, however, will be enameled without extra charge.

|                                                                  |         |
|------------------------------------------------------------------|---------|
| Standard finish, enamel with nickel trimmings                    | \$12 00 |
| Extra finish, rims and spokes enameled, all other parts nickeled | 15 00   |

After we have "done over" your old machine, the finish on it will be in every respect equal to that on a new machine.



## THE VICTOR JUNIOR.

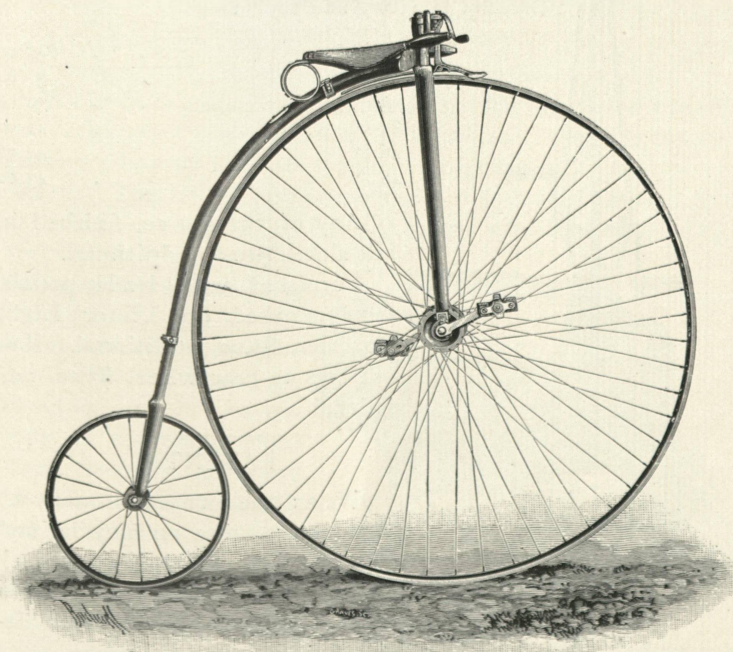


FIG. 35—VICTOR JUNIOR BICYCLE.

WHILE not strictly a high grade bicycle, like the Victor Light Roadster, this machine is entirely superior to the wheels heretofore in the market for boys. The backbone and front fork are of regular weldless steel tubing. The hubs, neck and spindle, and all working bearings are of forged steel; the spokes are double tangent, and attached at the rim with nipples.

The stock used in the items above mentioned is just the same as that used in the Light Roadster, so it will be seen that in vital points the Victor Junior will be abundantly able to perform the work that will be expected of it. It has spade handles, tangent spokes, square rubber pedals, ball bearings to front wheel, compressed tires, Victor saddle, adjustable step, etc. It is a new



departure in boys' bicycles, and will be found worthy to belong to the Victor family. Boys who see this machine before placing their orders will not be content to ride other wheels.

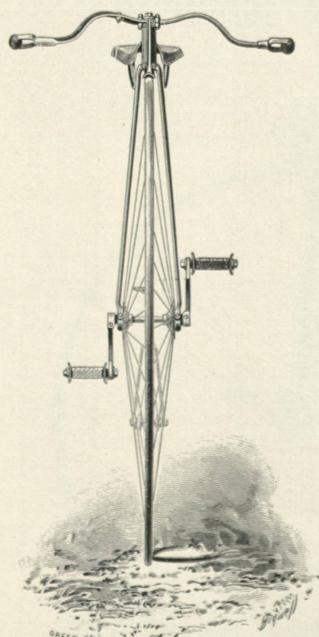


FIG. 36—FRONT VIEW OF VICTOR JUNIOR.

Prices, finished in Victor Enamel and nickel, crated, f. o. b. Chicopee Falls, Mass., with tool bag and tools :—

|         |           |         |
|---------|-----------|---------|
| 38 inch | . . . . . | \$35 00 |
| 40 "    | . . . . . | 37 00   |
| 42 "    | . . . . . | 39 00   |
| 44 "    | . . . . . | 41 00   |
| 46 "    | . . . . . | 43 00   |
| 48 "    | . . . . . | 45 00   |

Any of the above, finished in full nickel, \$10.00 additional.

Furnished with ball pedals, same as used on Victor Light Roadster, \$6.00 additional. Ball bearings to rear wheel \$5.00 additional.

#### PATENTS.

We are the owners of many U. S. patents bearing on bicycles and tricycles, and also have many patents applied for. We warn makers against copying our devices, as they will not be permitted to do so without license.



## CYCLING SUNDRIES.

### THE VICTOR CYCLOMETER.

A CYCLOMETER, being an instrument of precision, should be first theoretically correct, and next practically accurate.

We have originated and patented special devices for the Victor cyclometer, covering an entirely new and the only system of gearing whereby absolutely uniform register is *possible* for cycle wheels. The Victor cyclometer train of gears is adjusted to the size of cycle wheel by a single exchange wheel corresponding in the number of its teeth to the number of inches in diameter of the cycle wheel. It will readily be seen that the exchange wheel varying in size exactly as the cycle wheel varies, the train, if correct for one size, will be correct for all sizes.

We guarantee the theoretical and essential error of the Victor cyclometer train to be not over 19 inches in 1000 miles for every size, and challenge comparison. By sending the cyclometer to our factory any desired change of size can be obtained at a nominal charge of fifty cents.

The linked pawls interlocking with and positively controlling the first wheel of the train, and methods employed for actuating them in the Victor cyclometer, make the instruments practically accurate as they are theoretically correct.

Our patents cover the peculiar features noticeable in the Victor cyclometer.

The gearing is protected against shock by a spring which limits the amount of force which can be brought to bear upon it, and the instrument has also a secondary or trip dial, by which

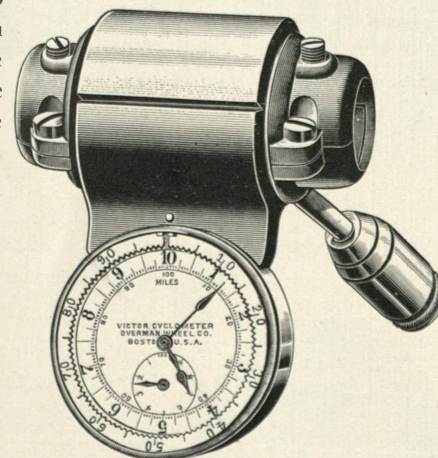


FIG. 37—VICTOR CYCLOMETER.



the necessity of noting the reading of your cyclometer at start and stop, and then subtracting the one from the other, to determine the distance traveled, is entirely obviated.

The Victor cyclometer has adjustable cone bearings, which prevent the rattling common to cyclometers after some usage. The arrangement of parts for attachment to the hub is the most convenient possible. Each instrument is furnished with attachment for substituting a lamp for the regular weight. Price, nickel plated, any size, \$10.00.

### GONG BELL.

All cast bronze, nickered. Cast metal has a clearer ring than forged metal. Gong bell has a loud, clear ring; strong and nothing to get out of order. Price, \$1.00.

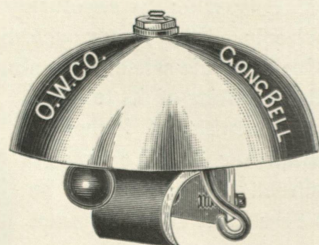


FIG. 38—O. W. CO. GONG BELL.

### THE PERFECTION BELL.

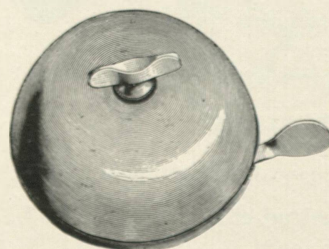


FIG. 39—PERFECTION BELL.

This is one of the most popular bells in the market. Rings continuously while the thumb piece is pressed, being operated by clock works.

Price, nickel plated, \$2.50.

### BOWN'S ÆOLUS BALL PEDALS.

We present the best article in this line that can be produced. Victor pedals have been most popular ever since their introduction. As we now make them we are very sure they are better, both in features and workmanship, than any others. They are



all steel forgings, and are fitted with our original square rubbers which have been so generally copied.

Price, complete, \$10.00 per pair. Extra wide, \$10.00. Rat trap, \$10.00. See Figs. 6 and 34. All are nickel plated.

### LAMPS.

The O. W. Co. Lamps lead the market in

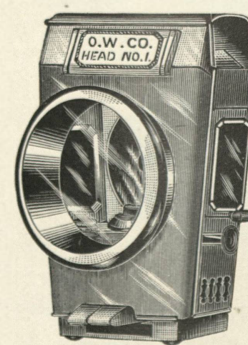


FIG. 40—O. W. CO. HEAD LAMP.

point of value. All have very deep reflectors, not ruined by a hole in the middle, cut-glass front, and screw wick holders. They show a white light ahead, green light to starboard, red light to port, and two red lights astern; are made almost wholly with rivets, and will

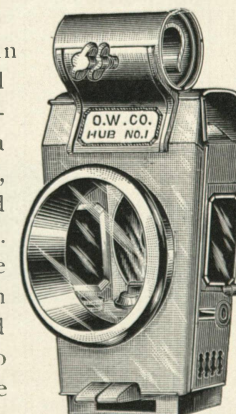


FIG. 41—O. W. CO. HUB LAMP.

not melt to pieces as soldered lamps do.

All hub lamps have metal bearings to go on axle, doing away with the screw fenders.

|                                 |               |
|---------------------------------|---------------|
| Head Light No. 1, enameled      | Price, \$4 50 |
| Head Light No. 1, nickel plated | " 6 00        |
| Hub Light No. 1, enameled       | " 5 00        |
| Hub Light No. 1, nickel plated  | " 7 00        |

### VICTOR SWING SADDLE.

The Victor Swing Saddle is now in its sixth year, and has grown to be a staple article, its features having commanded the preference of the best riders since its first appearance. The principal points are the long coil spring, which makes it exceedingly comfortable and removes a common source of "headers" by its fore and aft motion, and the detachable leather. The latter feature is valuable as a means of locking the machine, as it is removed instantly, and the machine cannot be ridden without it. The leather is easily adjusted to any desired tension.

Price, nickel plated, complete, with clips for attaching, \$6.00. See Figs. 31 and 32. Patented in U. S. and England.



## THE VICTOR SAFETY SADDLE AND SPRING.

We present this season an entirely new saddle and spring for safety bicycles, as shown on page 17. We feel that this cannot fail to prove exactly what is wanted in its line. All metal parts finely nickeled. See Figs. 18 and 19.

|                             |        |
|-----------------------------|--------|
| Price complete . . . . .    | \$7 50 |
| Price spring only . . . . . | 5 00   |

## DUPLEX WHISTLE.

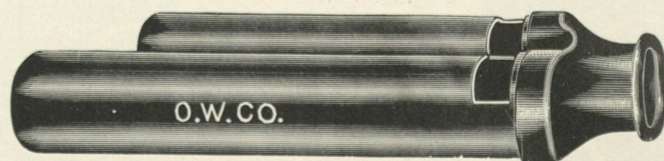


FIG. 42—DUPLEX WHISTLE.

This whistle (cut full size, chain not shown) is the generally accepted signal for all cyclists, and should be always ready. As made by us it has several important improvements. It blows with half the wind required by others. It has a beaded mouth-piece, which enables riders to hold it in their teeth, etc., etc. Nickel plated, with chain. Highest quality made. Price, post-paid, 25 cents.

## VICTOR WRENCH.

The problem in bicycle wrench making has been to combine in an adjustable wrench great strength and reasonable lightness.



FIG. 43—VICTOR WRENCH.

The Victor wrench is all forged steel, is light, and *will not bend*. It is a new departure and is adapted to meet the special wants of cyclists. The jaws are of best hardened steel and will be found always reliable. Opens  $1\frac{1}{2}$  inch.

Price, nickel plated, \$1.00.

The difficulty has been that most wrenches would, on being strained, bend in the back.



## VICTOR SPRING-TOP OILER.

No cap to lose. Opened and shut instantly. Cap cannot come off. Clean, convenient, handsome. The finest oiler ever offered to the cycle trade.

Brass, nickel plated. By mail, 25 cents.



FIG. 44—SPRING TOP OILER.

## RUBBER CEMENT.

For mending tires, one ounce bottle, 25 cents.



FIG. 45—RUBBER CEMENT.

## O. W. CO. OILS.

We put up the best lubricating and lighting oils in our patent spouted cans, which will be found a great convenience and economy in using the oil. These oils are the best made, and we guarantee satisfaction. Our agents are authorized to refund the price where there is any ground for complaint.

|                                       |           |
|---------------------------------------|-----------|
| Lighting oil, price per quart . . .   | 60 cents. |
| Lubricating oil, price per pint . . . | 50 cents. |

For the trade securely packed in one-dozen cases.

We cannot ship except in full cases.



FIG. 46—O. W. CO. OILS, SPOUTED CANS.

## O. W. CO. CHAIN LUBRICANT.

This is a preparation of plumbago which is adapted to the perfect lubrication of cycle chains. One application is sufficient for two or three months' use.

No other lubricant should be applied to chains, oil being especially objectionable. Packed in one pound tin boxes. Price, per box, 50 cents.

## PLUMBAGO.

Dry—to be applied with a brush to the chain, and to be used with an ordinary oiler for other parts of the machine. When a bearing is glossed over with plumbago, it will run a long time



without attention. It should be used in bearings with oil. Price, per can of one-half pound, 50 cents.

### HANDY HOOKS.

Handy Hooks have become a great convenience to riders, for holding trousers in place, as a substitute for leggings. They are in great demand in this country and Europe. Each pair mounted on black card, as shown in the cut. By mail, 10 cents.

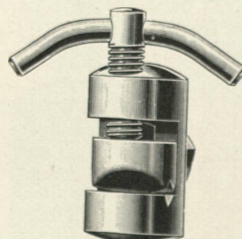


FIG. 47—O. W. CO. SPOKE GRIP.

### SPOKE GRIP.

Forged steel, nickel plated. New design, compact and very effective. Price, 60 cents.

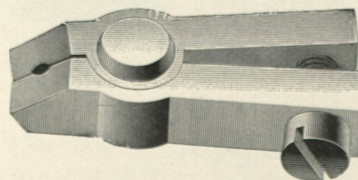


FIG. 49—O. W. CO. NIPPLE GRIP.

### NIPPLE GRIP.

We have undoubtedly made the best nipple grip in the market. It is drop-forged, every surface milled and perfectly true. We could not make a better one at any price. Price, blued, 60 cents.

### VICTOR HOLLOW RIMS.

We use these as the best that can be produced. We are prepared to supply them in all sizes, of our own manufacture. Prices furnished on application. For description, see pages 7 and 8.

We do not drill rims when ordered for other wheels than our own.

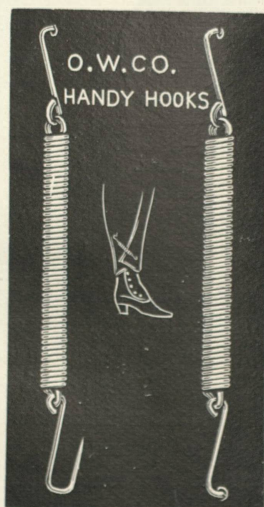


FIG. 48—HANDY HOOKS.

### ACME BICYCLE STAND.

The Acme Bicycle Stand was invented by Charles Wicksteed, of England. We purchased the patent, and since then have

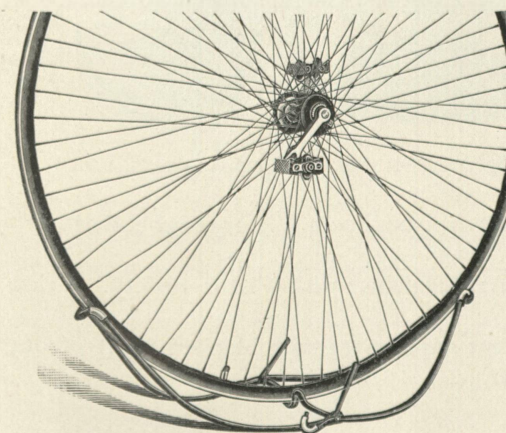


FIG. 50—ACME STAND.

added this item to our manufacture, for the cycling trade. There is no device which so completely provides for handling the bicycle either side up. It is easy to clean one's machine when inverted on an Acme Bicycle Stand.

We have made an adaptation of this stand for safety bicycles which can-

not but prove a welcome addition to the rider's outfit. It is entirely efficient.

|                    |   |   |   |   |   |   |   |   |   |        |
|--------------------|---|---|---|---|---|---|---|---|---|--------|
| Price for Ordinary | . | . | . | . | . | . | . | . | . | \$2 00 |
| Price for Safety   | . | . | . | . | . | . | . | . | . | 1 00   |

### TIRE CEMENT.

We are makers of Tire Cement, and much of the cement used in the United States is made by us. It is used by large wheel makers and large dealers throughout the land, and, as to its merits, we refer to every one who has used it.

If cement is good it must be adhesive and cohesive. It cannot be cohesive if, when pulled out in fine threads (heated), it shows small particles of dirt in its composition. Please heat a piece of O. W. Co. cement and draw it to a fine thread, and notice its clean appearance. We invite comparison in this and all other respects.

The best is the cheapest. 2 oz. sticks 25 cents. Prices furnished to large makers and dealers.





## TOOL BAGS.



FIG. 51—TOOL BAG.

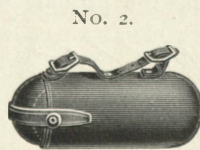


FIG. 52—TOOL BAG.

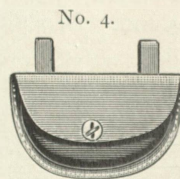


FIG. 53—TOOL BAG.

Tool Bag No. 1—As furnished with Victor Light Roadster. Price, \$1.50.

Tool Bag No. 2—As furnished with Victor Safety. Price, \$1.50.

Tool Bag No. 4—Neat appearance, with blocked front of one piece leather. Price, \$1.50.

## BOWN'S ÆOLUS BALL BEARINGS.

We own this very valuable patent, and are prepared to supply the bearings or pedals in large or small quantities to wheel makers and users. We are the only makers of this bearing in the United States, and confidently present it as the only perfect ball bearing made. It is impossible to make an adjustable bearing without using this patent, as it covers broadly the method of side adjustment. Any attempt at an adjustment from the bottom is worse than nothing, as it throws the true circle of the bearing groove into an ellipse. A ring of balls can only be adjusted by a beveled surface moved laterally.

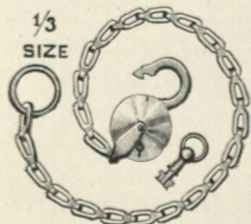


FIG. 54.

## PERFECTION BICYCLE LOCK.

Easily the best lock in market. It is "unpickable"—seven tumblers. By mail, \$1.



## CYCLE BRUSH TOOL.

This is an article which should be used to be appreciated. The use of a brush for cleaning bearings and other inaccessible parts, from sand and dirt, will be found much more satisfactory than any other method. This tool combines a brush of special pattern, a screw driver, a spanner for adjusting bearings, and a sharp point for picking out dirt that may have become incrustated in the parts. Try it and you will be glad you found it. Price, 50 cents.

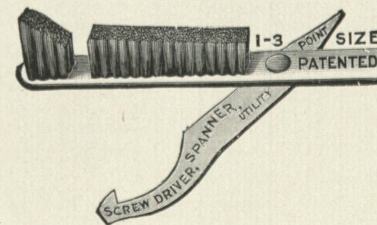


FIG. 55—CYCLE BRUSH TOOL.

## SCREW DRIVER.



FIG. 56—DOUBLE SCREW DRIVER.

Forged steel, hardened. No tool-bag is complete without it. Price, by mail, 25 cents.

## THE HANDY CARRIER.

The Handy Carrier weighs six ounces, will carry all the weight you want to put on it, and is instantly attached and detached with one hand without disturbing the bundle or touching a buckle, the bundle being carried as in a shawl strap (see Fig. 57—HANDY CARRIER, ATTACHED.

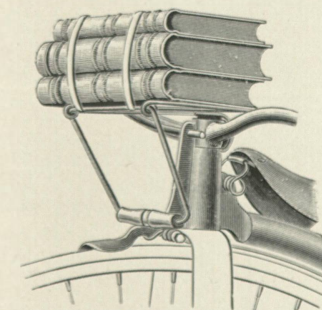


FIG. 57—HANDY CARRIER, ATTACHED.

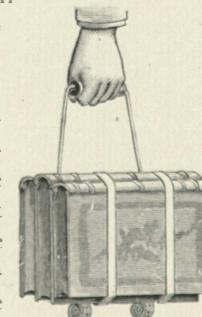
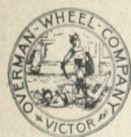


FIG. 58—HANDY CARRIER, DETACHED.

58), the part which bears on the brake spoon forming a perfect handle.

We make this carrier, and are prepared to supply the trade, to whom good discounts will be made. Price, nickel plated, \$1.00.



## PRICE LIST.

|                                                                               |             |
|-------------------------------------------------------------------------------|-------------|
| Victor Safety Bicycle.....                                                    | See page 19 |
| Victoria Safety Bicycle.....                                                  | " 20        |
| Victor Light Roadster Bicycle.....                                            | " 28        |
| Victor Junior Bicycle.....                                                    | " 30        |
| Victor Cyclometer, nickel, any size.....                                      | \$10 00     |
| O. W. Co. Head Lamp, No. 1, black.....                                        | 4 50        |
| O. W. Co. Head Lamp, No. 1, nickeled.....                                     | 6 00        |
| O. W. Co. Hub Lamp, No. 1, black.....                                         | 5 00        |
| O. W. Co. Hub Lamp, No. 1, nickeled.....                                      | 7 00        |
| Bown's Æolus Ball Pedals, nickeled, with square rubbers.....                  | 10 00       |
| Bown's Æolus Ball Pedals, rat-trap, nickeled.....                             | 10 00       |
| Bown's Æolus Steel Balls, each.....                                           | 08          |
| Duplex Whistle, with mouth-piece and chain, nickeled.....                     | 25          |
| Spring-Top Oiler, brass, nickeled.....                                        | 25          |
| Spoke Grip, for direct spokes, forged steel, nickeled.....                    | 60          |
| Nipple Grip, for tangent spokes, forged steel, blued.....                     | 60          |
| Victor Wrench, 5½ inch, nickeled.....                                         | 1 00        |
| B. & S. Wrench, 4-inch, nickeled.....                                         | 1 00        |
| B. & S. Wrench, 4-inch, black.....                                            | 75          |
| Victor Swing Saddle and Spring, nickeled.....                                 | 6 00        |
| Victor Safety Saddle and Spring, nickeled.....                                | 7 50        |
| Acme Bicycle Stand.....                                                       | 2 00        |
| Acme Safety Stand.....                                                        | 1 00        |
| O. W. Co. Gong Bell, nickeled.....                                            | 1 00        |
| Perfection Bell, nickeled.....                                                | 2 50        |
| Perfection Lock and Chain, nickeled.....                                      | 1 00        |
| Cycle Brush Tool.....                                                         | 50          |
| O. W. Co. Enamel, 4 ounce bottle, with brush.....                             | 50          |
| O. W. Co. Lubricating Oil, patent spouted cans, per pt., of dealers only..... | 50          |
| O. W. Co. Lighting Oil, patent spouted cans, per quart, of dealers only.....  | 60          |
| O. W. Co. Chain Lubricant, per 1 lb. box.....                                 | 50          |
| Plumbago, dry, per ½ lb. can.....                                             | 50          |
| Handy Hooks on cards, per pair.....                                           | 10          |
| Long Handy Hooks, per pair.....                                               | 20          |
| Tire Cement per lb. (in 10 lb. pipes only).....                               | 1 00        |
| Tire Cement per stick, 2 oz.....                                              | 25          |
| Rubber Cement for mending tires, 1 oz. bottle.....                            | 25          |
| Tool Bag, No. 1, as furnished with Victor Light Roadster.....                 | 1 50        |
| Tool Bag, No. 2, as furnished with Victor Safety.....                         | 1 50        |
| Tool Bag, No. 4.....                                                          | 1 50        |
| Double Screw Driver, forged steel, hardened.....                              | 25          |
| Foot's Anti-Header.....                                                       | 1 50        |
| Victor Hollow Rims, prices on application.                                    |             |
| Æolus Ball Bearings, prices on application.                                   |             |