

ONLY EDITION FOR 1890.



COLUMBIA
BICYCLES
POPE MANUFACTURING CO.
77 FRANKLIN ST. BOSTON MASS.
BRANCH HOUSES:
12 WARREN ST. NEW YORK:
291 WABASH AVE. CHICAGO:
FACTORY HARTFORD CONN:

ALBERT A. POPE PRES'T.
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Directions.

Terms, net cash with order.

With EVERY ORDER give full shipping instructions.

Freight or express charges always to be paid by the purchaser.

Correspondence *must* be sent to our Boston office, and plainly addressed to the Company, not to individuals.

Our stock carried in stores at Boston, New York, and Chicago is for local trade only. Orders from agents will be shipped direct from factory.

We cannot guarantee the safe delivery of goods. Our responsibility ceases when goods are delivered at post-office, express offices, or freight depots.

C. O. D. orders from outside of New England must be accompanied by money enough to pay charges both ways in case the goods are not accepted.

Our prices are invariable, and no discounts are allowed except to regular agents. Parties ordering machines incomplete will be allowed only half price for parts not taken.

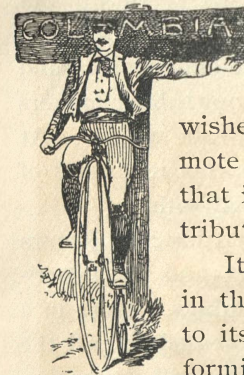
In ordering, always send weight of rider; and, if selection of size is to be left with us, send also height of rider, and length of leg inside of bottom of sole under ball of foot, and length of inside seam of trousers.

We warrant all our COLUMBIA BICYCLES and TRICYCLES to be free from imperfections in material or manufacture, and agree to make good, at store or factory, at any time within a year, any defects in them not caused by use, misuse, or neglect, provided their factory or serial numbers are intact. If such defects are found, all defective parts must be sent to us for examination before any claim is allowed. This warrant does not apply to nickel-plating, though no care or expense is spared to make it the best.

Colorplate
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THIRTEENTH ANNUAL GREETING.



O each individual of the large and ever-increasing army of wheelmen and wheelwomen, we again tender hearty greetings, and our good wishes for the fulfilment of everything that can promote their interests as such; with a simple assurance that it is our pleasure as well as our business to contribute to their welfare in all ways that lie open to us.

It has been our privilege to play an important part in the development of bicycling, from its beginning to its present position and prominence, by aiding in forming many organizations; by taking the initiative or lending a hand in establishing legal rights; by advancing and encouraging in every possible way important movements tending toward the improvement of highways; and the veterans who have watched proceedings from an interested standpoint with us for a dozen years, can undoubtedly recall other directions in which we have had opportunity to act and have not neglected it.

But during this whole time, we have as a matter of course held our business foremost, fully realizing that the first and most important means of encouraging bicycling is in furnishing the finest and best machines that inventive skill and the workman's art can produce. We have at all times aimed at perfection in this direction, and while with a reasonable appreciation of human fallibility we have never claimed to have reached it, we have had the satisfaction of knowing that our high aim has resulted in Columbias being at all times the leading and the best machines on the market, and their name a guarantee of unquestioned superiority.

While this is the case, our prices have been as low as those of such makes as approach nearest to Columbias in quality and but little higher than others which are decidedly inferior.

It has always been our object to show that in bicycles as in other goods, the Best is the Cheapest for anyone who can afford

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the price, and the extent to which this fact is by experience establishing itself in the minds of wheelmen has never been better shown than in our '89 business. In competition with everything, the demand for our Light Roadster Safety was such that its output ran far ahead of the record of any other machine of any make in a single year, notwithstanding the fact that we were embarrassed and delayed throughout the season by the inability of our tubing makers to supply us fast enough with the special grade of tube we use. At the same time, our trade on the regular bicycle was in excess of even the usual proportion of Columbias among all others.

The judicious buyer knows the value of reputation; he knows the value of the guarantee of a responsible house; and the experienced bicyclist knows the intrinsic worth of Columbias. Here in a nutshell is the reason for what some have been pleased to call the "good luck" we have enjoyed in the past, and the still increasing trade 1890 seems to have in store for us.

THE COLUMBIA LIGHT ROADSTER SAFETY is an even better machine than it was in 1889, though its record then was a remarkable one, particularly considering the great number made and the pressure under which they were put through the works. We have started far enough ahead this year to ensure each machine its full share of time and attention.

As on all our other 1890 machines, the Tires are even more securely put on than before, under a new treatment, and with our new Columbia cement.

THE COLUMBIA LADIES' SAFETY is our new machine for this season, and will please those for whom it is intended. It is unquestionably the finest of its class on the market,

THE TANDEM SAFETY is in appearance the same as last year, but we have been able as a result of experience to strengthen it in the points where the heavy strain upon this type of machine naturally tells most upon it.

OUR REGULAR BICYCLES are practically unchanged from last season. The splendid standing of Columbias is no way better shown than by the fact that the great majority of those wanting upright machines lately have come to us.

THE COLUMBIA LIGHT ROADSTER is ever gaining friends among the hardest and best riders and those the most competent to judge. It stands without a superior.

The reliable **EXPERT COLUMBIA**, too, continues to advocate its own cause in the most practical way. Its durability, ease of repair, elegance, and weight as low as many Light Roadsters, are points that are most attractive.

THE VOLUNTEER COLUMBIA has established itself satisfactorily, and its splendid qualities and low price ensure increasing favor and good sales. It has no equals at its price, and is superior to many so-called high grade bicycles.

The reduced prices at which we are able to offer the last two will be certain to please. There are no better values to be found.

We have prepared for this season a line of "**RATIONAL EXPERTS** and **VOLUNTEERS** which afford safety for those who prefer the high bicycle, but do not use the regular pattern.

THE SURPRISE TRICYCLE stands materially the same as last year, and will be found a most satisfactory machine.

THE COLUMBIA TANDEM TRICYCLE has no equal. It has stood the severe usage to which this kind of machine is necessarily subjected, with better results than any other.

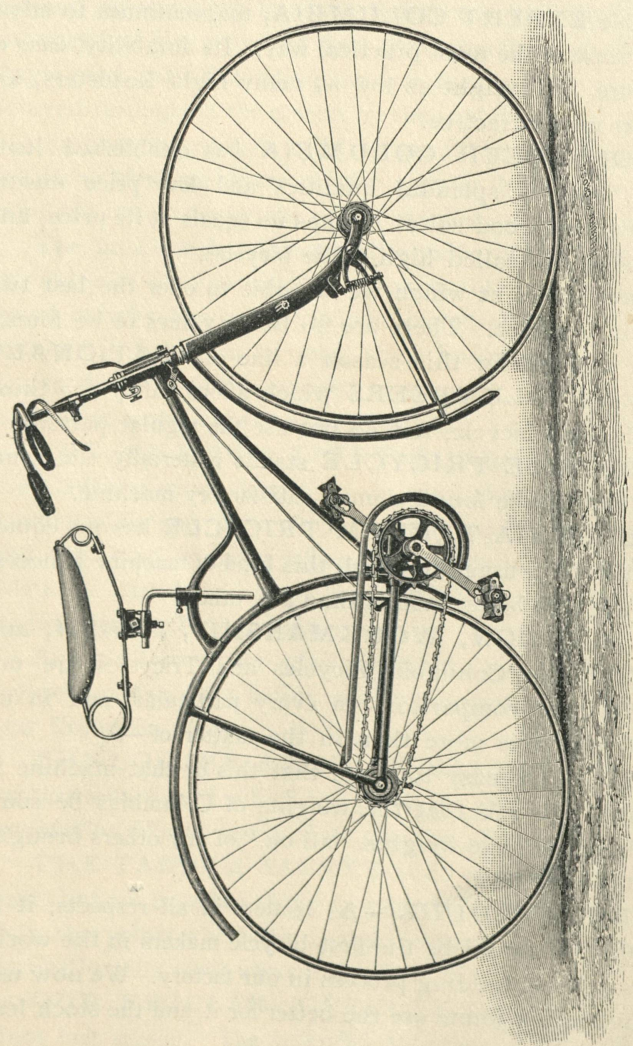
In point of **DESIGN, WORKMANSHIP, FINISH, and EQUIPMENT**, our Columbia Bicycles and Tricycles are not equalled. We invite comparisons in every particular, and in no feature do we urge this more than in the matter of—

WEIGHT.—It is easy to claim that this or that machine is "the lightest." We ask that the weights of Columbias be compared with the actual scale weights, "all on," of any others brought into competition with them.

ELECTRIC WELDING.—As leaders in all respects, it is appropriate that we should be the first bicycle makers in the world to utilize this valuable welding process in our factory. We now use it wherever we can, our joints are the better for it, and the stock less liable to injury.

POPE MANUFACTURING COMPANY.

TL 435.966 065 1890



The Columbia Light Roadster Safety.

Price, with "Double-Grip" Ball-Pedals, \$135. With "Double-Grip" Parallel Pedals, \$130.

Columbia Light Roadster Safety.

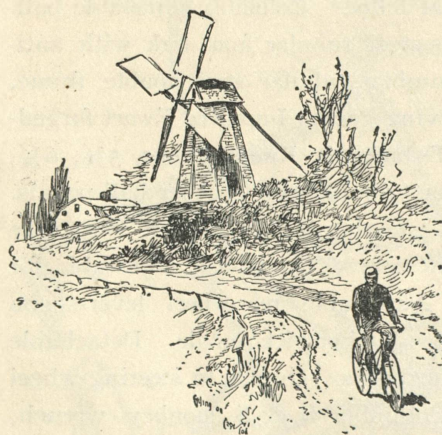
BRIEF. — 30-inch rear, 32-inch front wheel. Endless moulded rubber tires, $\frac{7}{8}$ -inch rear, $\frac{3}{4}$ -inch front. Cold-drawn and rolled seamless-steel hollow felloes. No. 13 tangent spokes, 40 to rear, 36 to front wheel, all adjustable at felloe. Columbia adjustable ball-bearings all around. Seamless-steel tubular front fork with anti-vibrating spring joints. Columbia tubular steel double frame. Adjustable crank-and-chain driving-gear. Improved Ewart forged-steel detachable-link chain. Detachable Knous cranks, $5\frac{3}{4}$, $6\frac{1}{4}$, and $6\frac{3}{4}$ -inch throw. Columbia "double-grip" rubber ball-pedals. $5\frac{1}{4}$ -inch ball-bearing socket steering-head. 28-inch one-piece $\frac{3}{4}$ -inch tubular-steel detachable curved handle-bar, adjustable for height. Vulcanite handles. Adjustable rear-wheel lever-spoon brake. Adjustable L seat-rod. Kirkpatrick saddle. Detachable steel-wire lantern bracket. Foot rests. Guards to steering-wheel and chain. Tool-bag, with Columbia B. & S. monkey-wrench, screw-driver, and oil-can. Gear 54. Weight, 51 lbs. Finish, enamel with nickel tips.

IN every part and particular the finest and most valuable machine of its class ever constructed.

THE DEMAND.—The rear-driving type of "Safety" bicycle has met with remarkable favor, and a rapidly-growing demand among a large class of riders, who recognize the wheel as a valuable means to health and recreation, or as a business convenience, but incline neither to the enjoyment of the regular bicycle with its contingent possibilities, nor to the staid reliability of the tricycle.

THE RESULT of turning our attention in this direction has been seen in our Veloce, which met with a heavy sale in 1888, and then in the present machine, whose phenomenal success in 1889 put it easily at the head of all, with a record of the heaviest output ever made on one bicycle in a single season.

Such were its qualities, that in preparing our Light Roadster Safety for 1890 we have found it unnecessary and unadvisable to make any material changes. In a few unnoticeable points in the construction, we have been able to increase the strength without adding to the weight. The use of a larger gauge of tubing for the handle-bar, and the minor points of new oil caps, and a new arrangement for easily adjusting the cones of the ball-bearings will meet with favor. A new device consists of a heavy washer under the



lock-nut on the steering-fork upright, having a short arm extending down over the socket-head and carrying a thumb-screw, which can be set up against the latter to prevent the steering-head from turning when the machine is not in use, and so permitting it to be leaned against any support without danger of falling.

As before, we urge special attention to the Spring Joints affording ample elasticity of frame *without affecting the positive steering*; the Ball-Bearing Socket Steering-Head; One-Piece Hollow Detachable Handle-Bar; the regular Light Roadster Wheel Construction; the Improved Ewart Chain and method of adjustment; the Rear Bearings, Rear Wheel Brake, and the strong and handsome Double Frame.

FRAME.—An economy of weight is had, together with an increase of strength and rigidity of frame, by making what is practically the perch of the machine of one continuous piece of seamless-steel tubing of heavy gauge, rolled into concave section throughout its length, carrying the crank-shaft bracket at its lower end, the centre tube and tubular driving-wheel forks, and the various braces, and extending well over the wheel, to act as a shield protecting the rider from dust and mud. It is thoroughly braced.

STEERING.—The socket steering-head is designed to afford the rider very ready control of the machine, and the action is rendered most easy by the use of accurately-fitted ball-bearings.

Consideration of our new Spring Joints comes appropriately under this head, for while the original idea is to relieve the frame and handle-bars from vibration, the value of this point is largely counterbalanced in any case where it is attained in such a way as to affect the positiveness of the steering.

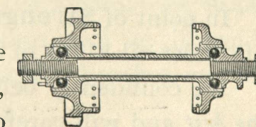
We present an amply elastic spring joint, which does not detract from the neat appearance of the fork, nor in the least affect the *positive steering* for which all our Safeties are remarkable. The joints work on conical bearings, which afford ample take-up for wear. The springs can readily be dispensed with, and the fork made perfectly rigid if desired.

THE HANDLE-BAR is one piece of $\frac{3}{4}$ -inch seamless-steel tubing, strengthened in the middle by a supplementary tube inside, keyed into the lug of the straight arm by a new device admitting of ready adjustment, and curved backward to bring the handles to a desirable and natural position for the rider, and one contributing much to his control over the machine. The handles are of vulcanite, and afford a comfortable and firm grip. The brake is strong and positive in action, with lever curved like the handle-bar, and connections admitting of easy and exact adjustment.

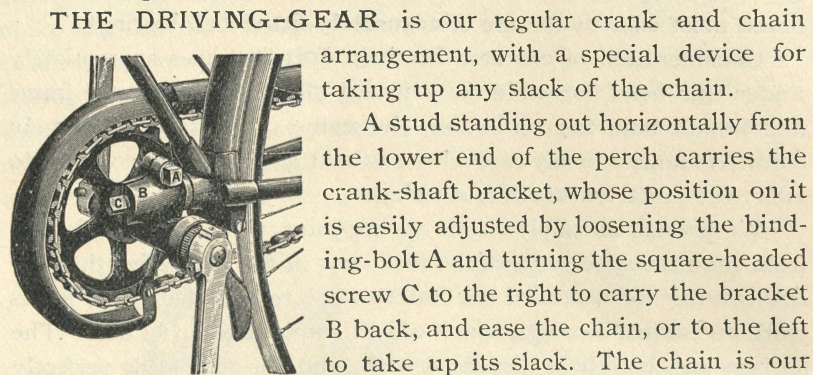
THE WHEELS are constructed with our unequalled seamless hollow felloes and tangent spokes.

THE TIRES are extra elastic and tough, specially prepared and then secured in the hollow felloes by our improved cement process, which is without question better and more practical than any other method. It holds the tires as firmly as it is possible to, and they can be taken out or replaced whenever necessary by the use of the spirit lamp.

COLUMBIA BALL-BEARINGS are used for both wheels and the driving-gear, the steering-wheel having a bearing similar to that of the rear wheel of the Expert, while the driver is fitted with a new and especially strong and light hub, with the bearings *outside*



of the flanges, so that the pull of the chain and all strains act upon both bearings, instead of on one side only.



THE DRIVING-GEAR is our regular crank and chain arrangement, with a special device for taking up any slack of the chain.

A stud standing out horizontally from the lower end of the perch carries the crank-shaft bracket, whose position on it is easily adjusted by loosening the binding-bolt A and turning the square-headed screw C to the right to carry the bracket B back, and ease the chain, or to the left to take up its slack. The chain is our

improved Ewart forged-steel interchangeable-link chain, shown on page 20. While the Safety is regularly geared to 54 inches, we furnish it geared to 51 or 57 inches when desired.

CRANKS.—For cranks we use our Knous pattern, which hold the pedals securely, and without danger of slipping or loosening. We now regularly put on long cranks, giving $6\frac{3}{4}$ inches throw, though shorter ones, giving 5 to 6 inches throw, can be substituted.

THE PEDALS are the regular Columbia ball, fitted with "double-grip" rubbers, though "double-grip" parallel pedals will be furnished on a new machine, if preferred, at \$5 reduction.

SPRING AND SADDLE.—A strong brace for the frame affords also a socket for the seat-rod, which is adjustable up and down in it, to suit the reach of any rider within reasonable limits. On this is fixed our new Kirkpatrick saddle, which has already proved itself so valuable.

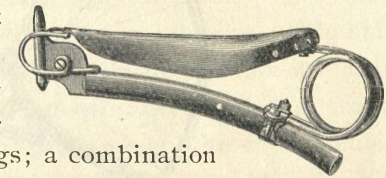
WE CLAIM that no bicycle of its class has ever equalled this Safety in Design, Construction, or Finish.

In point of Strength, it has no equal, a fact ensuring it a longer life under all kinds of use than any other make of Safety offered.

We confidently believe that any unprejudiced buyer, who wants the *best*, and will carefully study this by the side of any other Safety brought into competition with it, will not hesitate to select the Columbia Light Roadster Safety.

The Kirkpatrick Saddle.

This saddle is more generally used to-day than any other on the market, and its popularity is the best evidence of its merit. The peculiar advantages possessed by it arise from its general construction, with a perfectly adjustable frameless or hammock-pattern seat, suspended between fore and aft springs; a combination by which all jars and vibrations of the machine are absorbed.



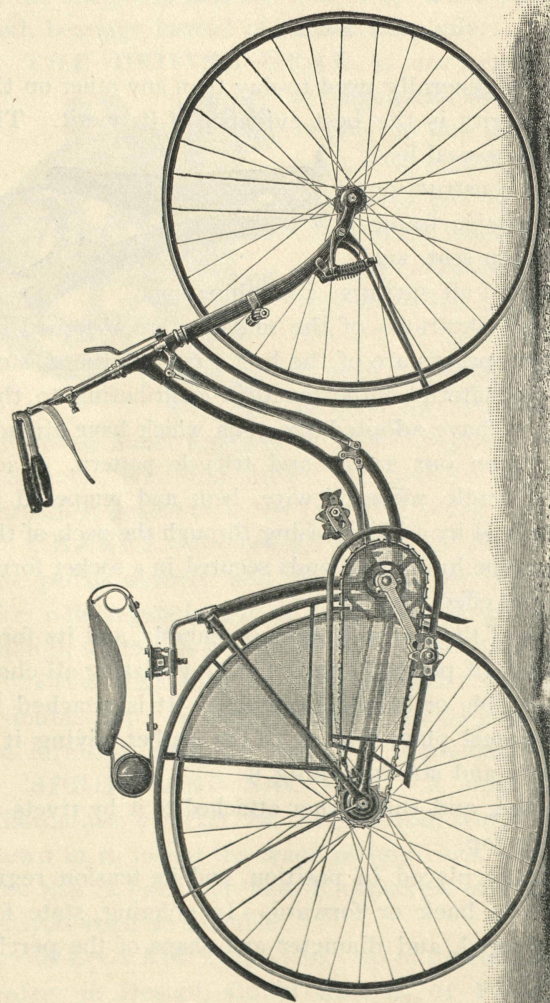
The front and rear springs are of the best tempered, round steel wire, and are of very material importance in contributing to this effect. For the rear we have adopted the coils, which have already proved so satisfactory on our safety and tricycle pattern. Each spring is made of a single piece of wire, bent and tempered as desired, the front one held by a bolt passing through the neck of the machine, and the rear one having its ends secured in a socket forming part of a simple but effective clip.

The seat proper is of the finest leather procurable, and its form admits of its shaping itself perfectly to the rider, obviating all chafing and any uncomfortable or harmful pressure. It is attached to the front spring by a steel plate riveted to the leather, giving it a fixed and proper shape and strengthening it.

The cantle is of steel, and the leather attached to it by rivets at the back instead of on top.

The saddle is readily placed in position, and its tension regulated by setting its clip back or forward. In ordering, state for what machine it is desired, and diameter and shape of the perch. Price, \$6.

As adapted for our safeties and tricycles, the Kirkpatrick Saddle affords all the advantages of the regular pattern, and its tilt can be regulated as desired, by means of an adjustable bracket and set-screws. Price, complete, \$7.50.



The Columbia Ladies' Safety.

Price, with "Double-Grip" Ball-Pedals, \$135. With "Double-Grip" Parallel Pedals, \$130.

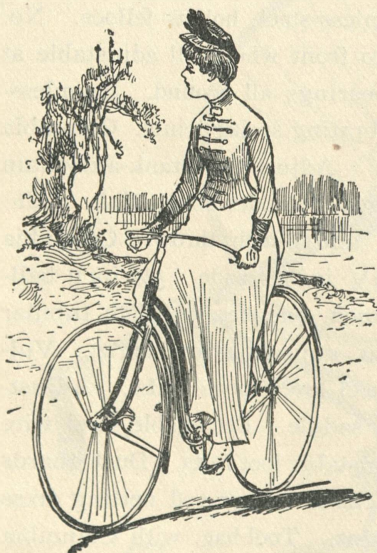
Columbia Ladies' Safety.

BRIEF. — 28-inch wheels. Endless moulded $\frac{3}{4}$ -inch rubber tires. Cold-drawn and rolled, seamless-steel, hollow felloes. No. 13 tangent spokes, 36 to rear, 32 to front wheel, all adjustable at felloe. Columbia adjustable ball-bearings all around. Seamless-steel, tubular front fork with anti-vibrating spring joints. Columbia tubular steel, double-loop frame. Adjustable crank-and-chain driving-gear. Improved Ewart forged-steel, detachable-link chain. Detachable Knous cranks, 5, $5\frac{1}{2}$, and 6-inch throw. Columbia "double-grip" rubber ball-pedals, $3\frac{1}{4}$ inches wide. $5\frac{1}{2}$ -inch ball-bearing, socket steering-head. 28-inch, one-piece, $\frac{3}{4}$ -inch tubular steel, tapered and curved handle-bar, adjustable for height. Vulcanite handles. Adjustable rear wheel lever-spoon brake. Adjustable seat-rod. Special Kirkpatrick saddle. Detachable steel wire lantern bracket. Round step. Adjustable foot rests. Dust guards to driving and steering wheels and chain. Improved netting dress guards to rear wheel and driving-gear. Tool-bag, with Columbia B. & S. monkey-wrench, screw-driver, and oil-can. Gear 50. Weight, 48 lbs. Finish, enamel and nickel tips.

OUR Columbia Ladies' Safety has been designed and is offered as a fit companion for the Light Roadster Safety, shown in the preceding pages, following immediately upon the great success of the latter, at the earliest opportunity we have been able to command for its production.

Appreciating as we do both the benefit conferred by those ladies who have added themselves to the ranks of cyclers, and that received by them, we could not do less than turn our best efforts and resources to the preparation of a Safety bicycle particularly suitable for their use, and affording them all the advantages of a Columbia in its perfectness of design, manufacture, and finish, backed up by our unquestioned guarantee — a point adding materially to its value and one which will not be overlooked by the careful buyer.

The result is certain to meet with entire approbation, as a machine presenting more advantages than any other of its class on the market—beauty of appearance, ease of action, steadiness of steering, lightness, and, at the same time, amply adequate strength for all use



that can properly be made of it. While it is, in the first instance, particularly intended for ladies, it will be largely used by youths, though for men we advise the Light Roadster Safety on account of its larger wheels and rear tire.

FRAME.—Here we depart from the usual form of loop frame, and two seamless-steel tubes are used, so formed and bracketed together as to be much stronger and more rigid than any other loop.

By sacrificing a characteristic point of our other Safeties in the tubular rear guard, using instead a sheet-steel guard which gives just as ample protection from dust and mud, at the same time saving some weight, we are able to run a tube from the double-loop upward to receive the saddle-post, affording the greatest amount of vertical adjustment of the saddle to be found in any ladies' Safety. The upright tube is fixed at a sufficient angle to carry the saddle backward the right distance when the post is moved up, and at the same time falling in with the graceful lines of the machine.

THE SPRING FORK is too well and favorably known to all who are acquainted with our Light Roadster Safety to need a full description here, and we are well within bounds in saying it is the most satisfactory pattern on the market. It is simple, gives spring enough and not too much, and it does not in any way interfere with the steering. The springs can be replaced quickly and easily when necessary, and can be made non-acting at any time by tightening the joint bolts. We advise the use of the spring fork for the comfort

of the rider and the life of the machine, but we will substitute a continuous fork in a new machine when this is preferred.

THE WHEELS are our regular tangent-spoke, seamless hollow felloe pattern, and though comparatively small and light are well proportioned for their special purpose, splendidly made and very strong.

THE TIRES are of the best quality, put in with great care under our new method, and are there to stay.

THE BEARINGS are regular Columbia adjustable ball-bearings, easy running, simple, and not liable to get out of order. They give the best service, and if cared for according to the instructions furnished, will out-wear many other parts of the Safety.

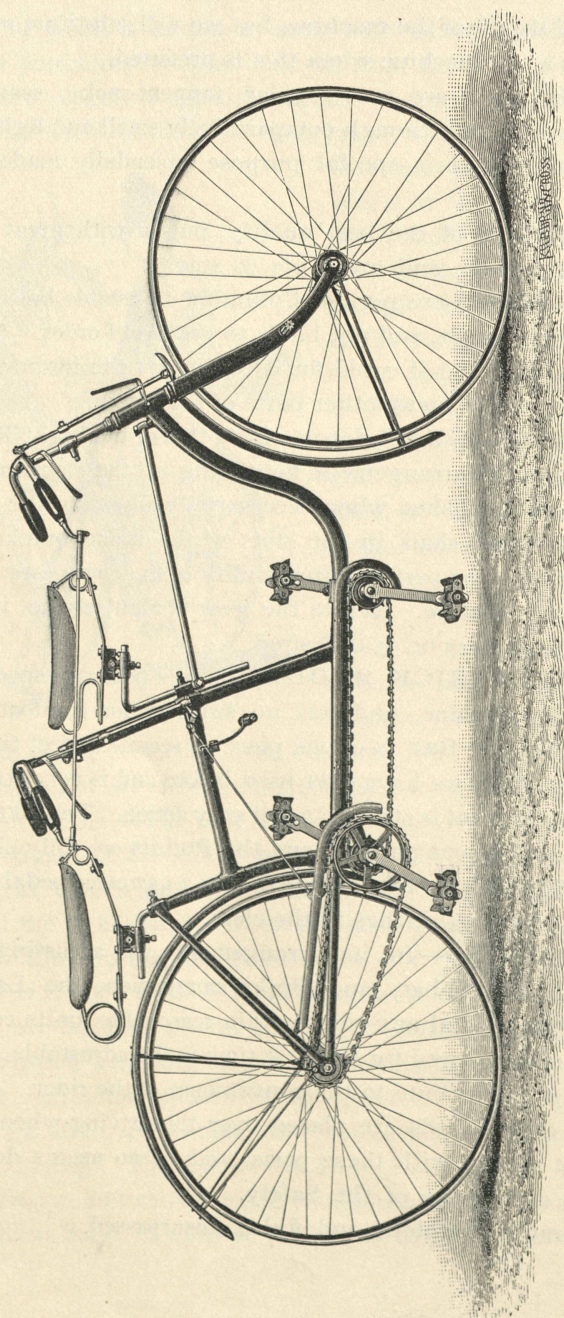
THE DRIVING-GEAR departs from that of the Light Roadster Safety only in its arrangement for taking up the slack of the chain. This is accomplished when necessary by adjusting the position of the rear wheel shaft in the slots of the frame bracket in which it is carried. The perfect adjustability of the chain (see page 20) is an important feature. While the gear is regularly 50, it can be furnished geared to 47 or 53 if desired.

THE KIRKPATRICK SADDLE is of a pattern especially prepared for this machine, and has no superior for comfort and safety. The **Handle-Bar** is of one piece of seamless-steel tubing of larger diameter than we have ever used before and is very strong. The **Brake** arrangement is strong and of easy action. The **Cranks** are our well-known Knous pattern, and the **Pedals** are fully shown on page 33. We regularly use on this Safety a narrower pedal than the usual size, giving $3\frac{1}{4}$ inches in the clear.

ADJUSTMENTS.—In its arrangements for adjusting the Saddle, Pedals, Handle-bar, and Brake connection, the Ladies' Safety is unsurpassed, and any rider within reasonable limits can be fitted. A feature introduced for the first time is the adjustable **Foot Rests**, which will contribute to the convenience of the rider.

Light wire dress guards are placed over the driving-wheel and gear to prevent contact with these parts, and by no means detract from the good appearance of the Safety.

Its equipment is complete, and finish unsurpassed.



The Columbia Tandem Safety.

Price, with "Double-Grip" Ball-Pedals, \$200. With "Double-Grip" Parallel Pedals, \$190.
Weight, 82 lbs.

Columbia Tandem Safety.

BRIEF.—30-inch wheels. Endless moulded $\frac{7}{8}$ -inch rubber tires. Crescent felloes. No. 13 tangent spokes, 44 to rear, 36 to front wheel, all adjustable at felloe. Columbia adjustable ball-bearings all around. Seamless-steel tubular double-frame, and front forks. Detachable tubular front brace. Adjustable crank-and-chain driving-gear. Improved Ewart forged-steel detachable-link chain. Detachable Knous cranks, $5\frac{3}{4}$, $6\frac{1}{4}$, and $6\frac{3}{4}$ -inch throw. Columbia "double-grip" ball-pedals. $5\frac{1}{4}$ -inch ball-bearing socket steering-head. 28-inch one-piece tubular-steel detachable curved handle-bars, adjustable for height. Detachable handle-bar connecting-rod. Vulcanite handles. Adjustable plunger lever-spoon brake to front wheel, adjustable lever-spoon brake to rear. Adjustable L seat-rods. Kirkpatrick saddles. Detachable lantern bracket. Foot-rests. Guards to both wheels and chains. Tool-bag, with Columbia B. & S. monkey-wrench, screw-driver, and oil-can. Gear 57. Weight, 82 lbs. Finish, enamel, with nickel tips.

AS a result of the popularity of the rear-driving Safety, a decided call has arisen for a Tandem Safety, to meet which we have designed a machine presenting as many as possible of the features of our very successful single, the superior merits of which are too well known to require rehearsing here.

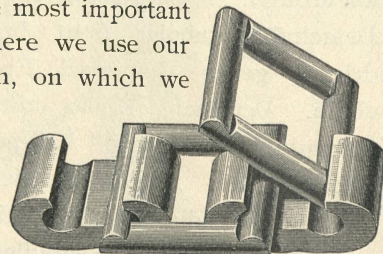
ADVANTAGES.—The security afforded against serious falls, the comparative lightness, and the simplicity and consequent unlikeliness of its getting out of order, added to the greater degree of "sociability," especially with a lady on the front seat, than can be had with two single machines of any kind, go to make this a popular and desirable bicycle.

IN OUTLINE it is as handsome as any machine we have ever made; its **FINISH** is our best, than which there can be no better; its **CONSTRUCTION** and **EQUIPMENT** are in all respects the

most suitable, and its WEIGHT is as low as can safely be expected to carry two persons.

THE FRAME is of our regular seamless-steel tubing, of suitable sizes and gauges, well bracketed and braced together. When a lady is to ride, the brace extending from the front seat-rod to the steering-head is readily detachable.

DRIVING GEAR.—For ease of working, durability, and ready interchangeability of all parts, our driving gears are unequalled by any other in use. The most important feature is the chain itself, and here we use our improved Ewart forged-steel chain, on which we have exclusive rights, and which presents every advantage of the earlier pattern, with less liability to break or rattle, on account of the reduction in length of link.



Any link may be taken out or replaced instantly, when sufficient slack is given to the chain to bring two links around to a right angle with each other. The links are made under our improved process, are drop-forged, case-hardened, and constitute the most satisfactory chain for its purpose; while the fact that under regular tests it bears a strain of 2,000 lbs. before breaking, sufficiently demonstrates its strength. It is readily oiled and cleaned; features which should frequently be taken advantage of in any chain.

THE STEERING is practically the same as in the Light Roadster Safety, with an extra advantage in the direction of steadiness, contributed by the greater length of machine.

THE HANDLE-BARS are each of one piece of the best seamless-steel tube, strengthened in the middle by an inner tube to provide against breakage, and curved to bring the handles into the proper position. An adjustable connecting-rod between the bars enables the rear rider to control the steering. This may be applied at either side, or left off entirely when desirable.

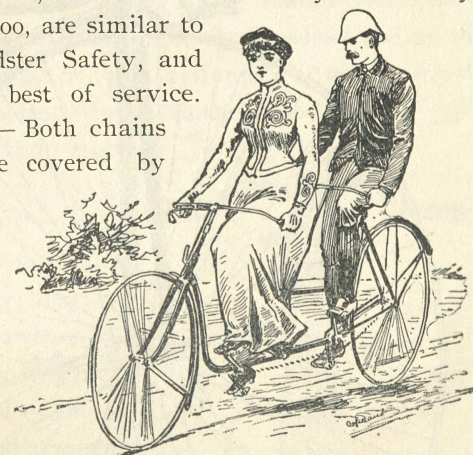
BRAKES are provided for both riders.

THE WHEELS are of the same general construction as in the single Safety, save that solid felloes are used. Tangent spokes,

hubs similar to those of the single, and felloes and tires of the best materials and ample size, make them in all ways satisfactory.

THE BEARINGS, too, are similar to those of the Light Roadster Safety, and are certain to give the best of service.

DRESS GUARDS.—Both chains and sprocket wheels are covered by guards, the front one especially arranged to keep a lady's skirts from contact with the driving gear.



KNOUS CRANKS

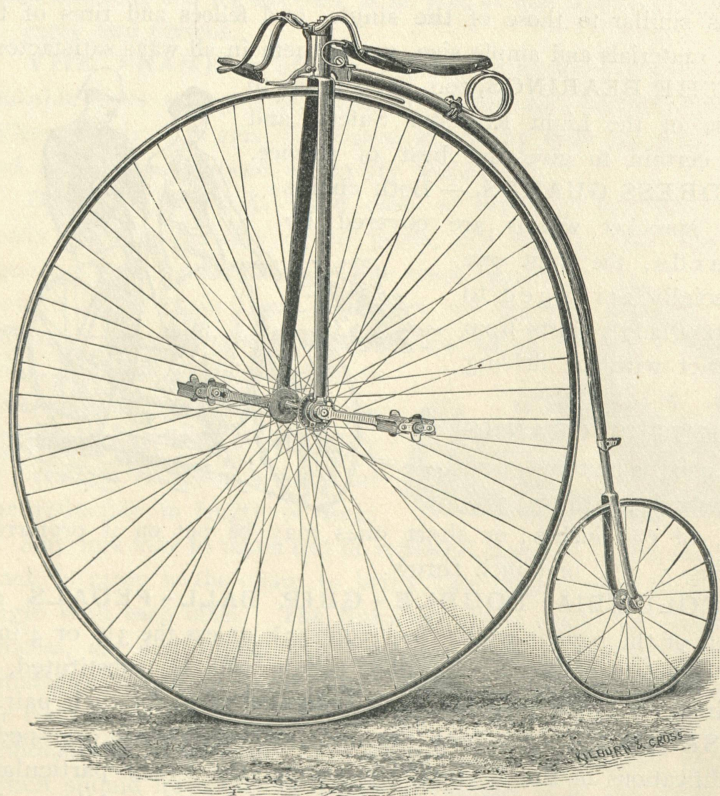
are used, admitting of an adjustment of throw, $5\frac{3}{4}$, $6\frac{1}{4}$, or $6\frac{3}{4}$ inches; or short ones may be put on if preferred, giving 5, $5\frac{1}{2}$, or 6-inch throw.

COLUMBIA DOUBLE-GRIP BALL-PEDALS are used, of the regular width (see page 33), unless the $3\frac{1}{4}$ or 4-inch are specially ordered. Parallel pedals will be substituted, if desired, on a new machine, at a reduction of \$5 for each pair.

SADDLES.—For both the front and rear we use our special modifications of the Kirkpatrick saddle, the former particularly adapted for a lady's use. No more comfortable saddles exist. They are equipped with adjustable brackets, by which their tilt can be easily regulated.

The seat rods are adjustable up or down, to suit the reach of any rider, and each saddle can easily be changed upon the upper arm to adjust the rider's position over the pedals.

THE COLUMBIA TANDEM SAFETY will be found the best and easiest machine for a novice to learn to ride upon, since an experienced rider on the rear can readily control it, independent of the front rider, giving the latter an opportunity to become familiar with the motion and the driving of the bicycle, and, as experience and confidence are gained, with the steering.



The Columbia Light Roadster.

PRICE, \$125.

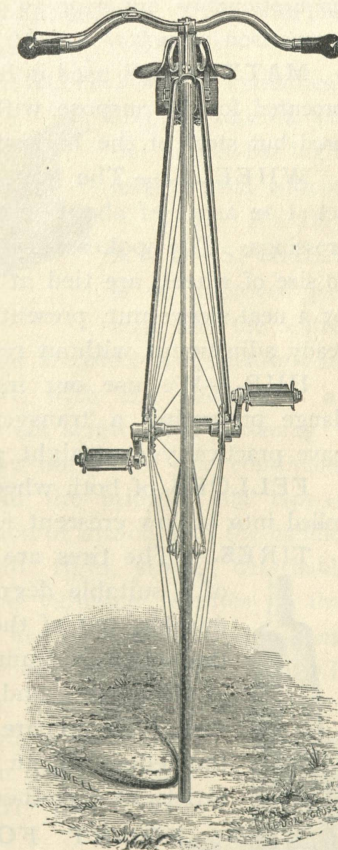
For a 51-inch, M finish, with Ball-Bearings all around, Columbia "Double-Grip" Ball-Pedals, Spade Handles, Kirkpatrick Saddle, and One-Piece Hollow Cow-Horn Handle-Bar.
Or, with Columbia "Double-Grip" Parallel Pedals, \$120.

Additional for finish H or L, \$10.00.

Difference of \$2.50 for each two inches in size, up or down.

(For full Schedule of Prices, etc., see page 42.)

BRIEF OF 51-INCH. — Endless moulded rubber tires, $\frac{7}{8}$ -inch front and $\frac{3}{4}$ -inch rear. Cold-drawn and rolled seamless-steel hollow felloes. No. 13 tangent spokes, 68 to front wheel and 20 to rear wheel, all adjustable at felloe. Columbia "double-grip" rubber ball-pedals. 18-inch rear wheel. Forged steel, $3\frac{1}{2}$ by $5\frac{3}{4}$ -inch hub-flanges on $8\frac{3}{4}$ -inch steel axle. Detachable Knous cranks, 5, $5\frac{1}{2}$, and 6-inch throw. Columbia adjustable ball-bearings to front and rear wheels. $1\frac{3}{8}$ -inch cylindrical perch, made of imported patent cold-drawn, seamless-steel tube. 5-inch cylindrical head, with dust-shield. 4-inch hemispherical and conical steering-centres, with Copeland duplex adjustment. Columbia elliptical, cold-drawn, seamless-steel, tubular front and rear forks. 28-inch hollow, continuous-steel, detachable cow-horn handle-bar, $2\frac{1}{2}$ -inch drop. Spade handles. One-piece leg-guard. Grip-lever-spoon brake. Adjustable step. Kirkpatrick saddle. Tool-bag, with Columbia B. & S. monkey-wrench, screw-driver, and oil-can. Weight, with saddle and pedals on, 38 lbs.



THE Columbia Light Roadster is a genuine light-weight bicycle, about 7 pounds lighter than the Expert. We put it out for its sixth season with its reputation established for elegance, ease of running, and strength, and fully justified in claiming for it the first place among all machines of its class in the world.

It is too well known to require elaborate description.

WEIGHT.—It is just what we call it,—a **LIGHT ROAD-STER**; and in this, as in other important respects, will be found to differ materially and favorably from some other machines, for which equal claims have been made. Its thorough use by thousands of riders has demonstrated the fact that it will stand as much as *any* tangent spoke machine on the market, while it is unquestionably superior to any other of its weight. A careful comparison of *actual weights* is urged upon intending purchasers.

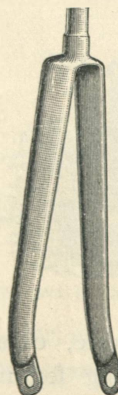
MATERIALS used in its construction are the best that can be procured for the purpose, without regard to expense. No metal is used but steel of the highest grades. *There are no castings.*

WHEELS.—The front wheel has its "**Tangent**" Spokes set at an angle of about 32 degrees from the direct, making three crossings. The spokes, varying in number from 60 to 72, according to size of wheel, are tied at two crossings, and held in the felloe by a neat sleeve-nut, presenting a square shoulder admitting of a ready adjustment without removing the tire.

HUB.—We use our improved form with light forged-steel flange presenting a transverse rim, through which the spokes have practically a straight pull.

FELLOES of both wheels are of the best *seamless-steel* tube, rolled into hollow crescent form by our own improved method.

TIRES.—The tires are of the first quality of Para rubber, of a suitable degree of toughness to make them very durable, but of the greatest elasticity. We intend that the stamp "**Columbia**" shall be justified by the quality of these tires, and to this end willingly pay their extra cost. We prepare them specially, and secure them in the felloes by an improved cement process, the most satisfactory method that we have ever found.



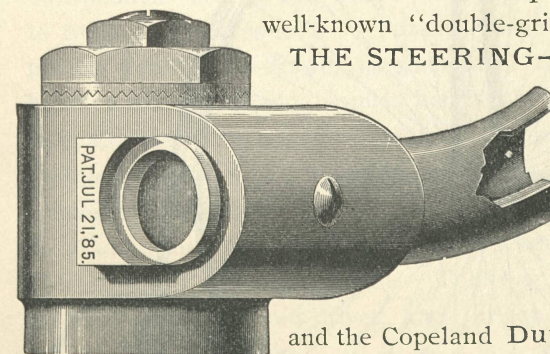
FRONT FORKS, PERCH, AND REAR FORKS are all made of the best seamless-steel tubing, and their construction gives them the greatest possible rigidity.

BEARINGS are the adjustable Columbia ball to front and rear wheels.

BALLS.—All the balls we now use in our machines are made under our own processes, by special machinery of great accuracy, from the finest steel, and then ground and polished and case-hardened.

CRANKS are of our regular Knous pattern, drilled for three adjustments, and have from 5 to 6-inch throw. The longer cranks ($5\frac{3}{4}$ to $6\frac{3}{4}$ inch) can be substituted if desired.

PEDALS are of the Columbia ball pattern, fitted with our well-known "double-grip" rubbers.



THE STEERING-HEAD is cylindrical, slightly tapered, and the handle-bar lug is forged solid with it.

THE NECK-AND-SPINDLE is of improved pattern, and the centres

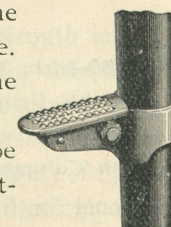
and the Copeland Duplex Adjustment are similar to those parts of the Expert, with the addition of an interlocking washer, which holds the set screw from loosening.

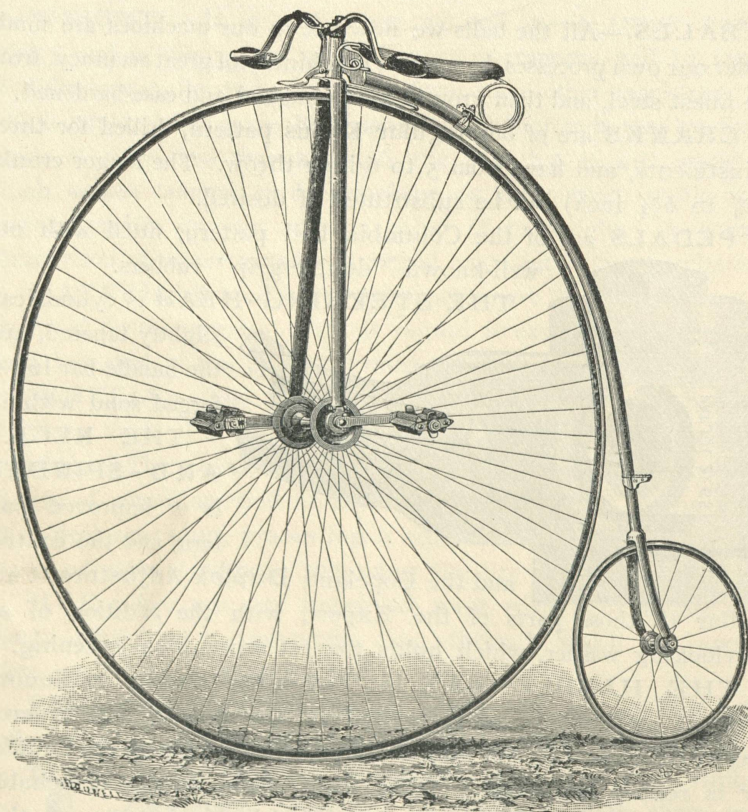
THE HANDLE-BAR is "cow-horn," of one continuous piece of steel-tubing, strengthened in the middle, and tapered toward the ends. By our special method of attachment the handle-bar is readily removable. This light, rigid, strong, detachable handle-bar will be found one of the valuable features of this machine. We regularly put on a bar having a drop of $2\frac{1}{2}$ inches; though, if desired, we will substitute one of $1\frac{1}{4}$ -inch drop. It can be furnished of different lengths, from 28 to 30 inches over all. The brake-lever is curved to conform with the handle-bar; the brake is of easy action and reliable.

SPADE HANDLES are regularly used; the same as applied to the Expert.

THE ADJUSTABLE STEP can readily be placed at any desired height or angle, the adjustment being made by a single bolt and nut.

THE SADDLE is of the improved Kirkpatrick pattern, as described fully on page 13.





The Expert Columbia.

PRICE, \$110.

For a 50-inch, D finish, with Ball-Bearings all around, Columbia "Double-Grip" Ball-Pedals, Spade Handles, Kirkpatrick Saddle, and One-Piece Hollow Cow-Horn Handle-Bar.

Or, with Columbia "Double-Grip" Parallel Pedals, \$105.

Additional for finish A or C, \$10.

Difference of \$2.50 for each two inches in size, up or down.

(For full Schedule of Prices, etc., see page 42.)

BRIEF OF 50-INCH. — Metal parts all steel, and no castings. Endless moulded rubber tires, 1-inch front and $\frac{3}{4}$ -inch rear. Crescent felloes. 56 and 18 direct spokes, No. 11 $\frac{1}{2}$ gauge, with both ends enlarged. $4\frac{1}{2}$ -inch recessed steel hubs, on $8\frac{3}{4}$ -inch axle, with $5\frac{3}{4}$ -inch spread of spokes. Detachable Knous cranks, 5, $5\frac{1}{2}$, and 6-inch (or $5\frac{3}{4}$ to $6\frac{3}{4}$ -inch) throw. Columbia "double-grip" rubber ball-pedals. 18-inch rear wheel. Columbia adjustable ball-bearings to front and rear wheels. $1\frac{1}{2}$ -inch cylindrical perch, made of imported patent cold-drawn, seamless-steel tube. 5-inch cylindrical head, with dust-shield. 4-inch hemispherical and conical centres, with Copeland duplex adjustment. Columbia elliptical, cold-drawn, seamless-steel, tubular front and rear forks. 28-inch hollow continuous-steel, detachable cow-horn handle-bar, $2\frac{1}{2}$ -inch drop. Spade handles. One-piece leg-guard. Grip-lever-spoon brake. Adjustable step. Kirkpatrick saddle. Tool-bag, with Columbia B. & S. monkey-wrench, screw-driver, and oil-can. Weight, with saddle and pedals on, 44 lbs.

WE put out the Expert for its ninth year with its reputation for stanchness, durability, ease of running, and beauty of lines and finish fully established.

IN GENERAL. — As it was the first *scientifically constructed* high-grade roadster placed on the market, it met with an immediate and unqualified success, and it stands to-day as the most reliable — and relied on — regular roadster in the world.

While we class it as a medium-weight machine, it weighs but a few pounds more than our Columbia Light Roadster, and NO MORE than some other "light roadsters" on the market.

CONSTRUCTION. — In its manufacture strength has in no case been sacrificed for lightness, nor durability for cheapness, nor simplicity and practicality of construction for unnecessary novelty. All metal parts are of steel, and shaped in dies.

THE RAKE of the Expert, that is, the inclination of the centre line of the forks, backward from a perpendicular through the axle of the front wheel, measuring at the bottom of the head, is 2 inches for a 54-inch wheel, and the same angle on other sizes.

THE FRONT AND REAR FORKS (see cut, page 24) are of the best seamless-steel tube, of elliptical cross-section, made with a regard to the best resistance of lateral and torsional strains.

THE HEAD is cylindrical, five inches high, and is provided with a neat dust-shield. The handle-bar lug is forged solid with it. An improvement especially invented for this machine is the hemispherical or ball-steering upper centre, the simplest and most practical of "ball-heads," and our original device.

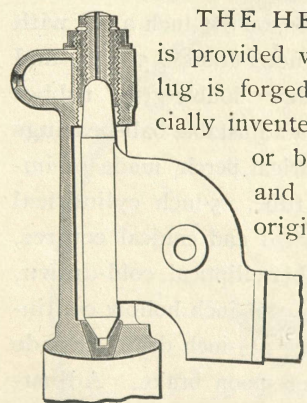
OUR DUPLEX ADJUSTING DEVICE consists of a cylinder-screw setting well down and around the tapered spindle and admitting of an adjustment for lateral strain, and an internal bolt-screw adjusting down upon the upper spindle-end. Each part has its own set-nut, affording great strength, perfect adjustment, and less liability than other head devices to work loose in riding. All bearing parts are case-hardened to prevent wear.

HANDLE-BAR.—The cow-horn handle-bar is hollow, of one piece of $\frac{1}{8}$ -inch seamless-steel tubing, strengthened by a solid core driven into the middle portion, and gracefully curved and tapered. It is readily removable by taking off the left handle and drawing the key from the lug. A choice of length and drop may be had, as in the Light Roadster.

HANDLES.—The Expert is regularly fitted with spade handles, though either pear-shaped vulcanite, or "double-grip" handles will be substituted for these on a new machine when desired.

WHEELS.—The flanges of the forward wheel are $4\frac{1}{2}$ inches in diameter, with from $5\frac{1}{2}$ to $6\frac{1}{2}$ inches breadth between them. This breadth of hub, the number and size of the spokes, and the construction of the felloe, make the Expert wheel exceedingly rigid.

THE SPOKES are of the best drawn steel, No. 11½ wire, enlarged at both ends; and they are "direct," a principle of construction recognized as the most satisfactory for all-around use in a medium-weight roadster. They are headed and nicely fitted in the



Felloe, which is of crescent form, of wide section, and deeply rolled and welded by our patent machinery.

OUR TIRES are of the best Para rubber, made in an endless mould, and put on by a special cement process with the greatest care. They are in to stay, though readily removed and replaced when necessary, without having to be shipped to our factory.

THE CRANKS are detachable, closely fitted, and keyed. They are our regular Knous pattern, affording an absolutely secure socket for the pedal pins, with an adjustable throw of 5, $5\frac{1}{2}$, or 6 inches. We also furnish, when desired, extra long cranks, allowing $5\frac{3}{4}$ to $6\frac{3}{4}$ inches throw.

THE PEDALS are the improved Columbia "double-grip" ball-pedals, shown on page 33, though parallel pedals may be substituted on new machines, at a reduction of \$5 in price.

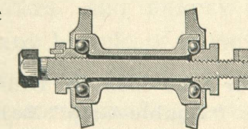
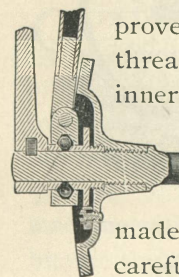
BEARINGS.—Every bearing part is accurately formed and fitted by machinery, hardened with particular care, and polished, so that a new machine may run as freely as if it had been used a week. The front wheel bearings of the Expert are of our well-known and proved Columbia ball pattern. The recess in the hub is threaded, and the adjusting part of the sleeve put on the inner side. On this is formed a large serrated annulus, easily turned by the thumb and finger, and held in position by a neat block screwed to the hub.

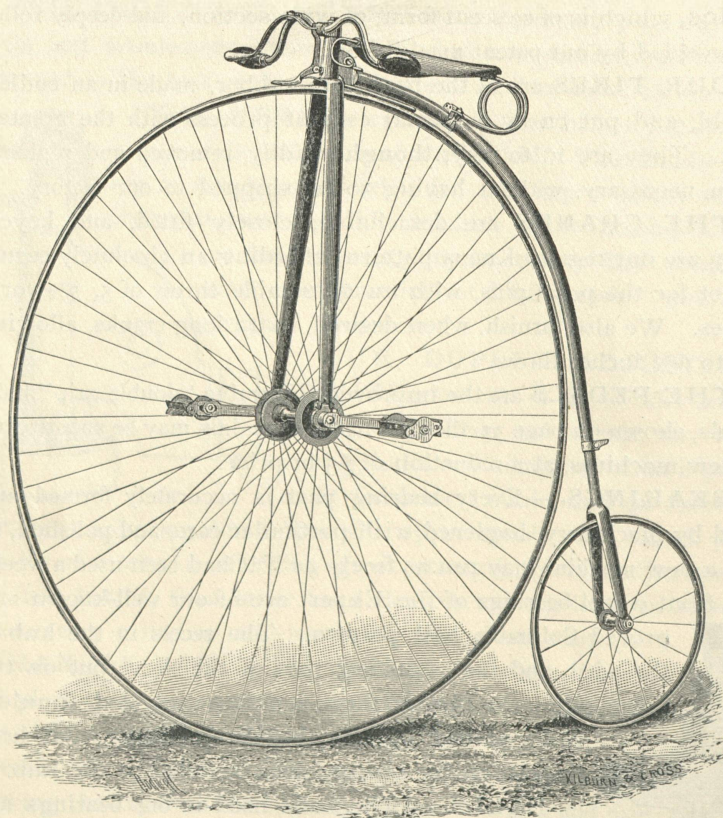
BALLS.—The balls used in our bearings are made by special machinery of great accuracy, and are very carefully case-hardened and polished.

The rear wheel also is provided with our Columbia ball-bearings. The hub is of steel, drop-forged, and the single row of balls on each side is in a hardened box, set in, and the adjustment is effected by turning one cone by its annulus.

THE SADDLE with which the Expert is regularly fitted is our improved Kirkpatrick, described in full on page 13.

STEP.—The adjustable step is already shown in the Light Roadster description, and may readily be placed at any desired height, or altogether removed.





The Volunteer Columbia.

PRICE, \$90.

For a 50-inch, K finish, with Ball-Bearings all around, Columbia "Double-Grip" Ball-Pedals, Spade Handles, Kirkpatrick Saddle, and One-Piece Hollow Cow-Horn Handle-Bar.

Or, with Columbia "Double-Grip" Parallel Pedals, \$85.

With Cone Bearings to Rear Wheel, and Parallel Pedals, \$80.

Difference of \$2.50 for each two inches in size, up or down.

(For full Schedule of Prices, etc., see page 43.)

BRIEF OF 50-INCH. — Metal parts all steel, and no castings. Endless moulded rubber tires, $\frac{7}{8}$ -inch front and $\frac{3}{4}$ -inch rear. Crescent felloes. 56 and 18 direct spokes, No. 11½ gauge, with both ends enlarged. $4\frac{1}{4}$ -inch recessed steel hubs, on $8\frac{3}{4}$ -inch axle, with $5\frac{3}{4}$ -inch spread of spokes. Detachable Knous cranks, 5, $5\frac{1}{2}$, and 6-inch throw. Columbia "double-grip" rubber ball-pedals. 18-inch rear wheel. Columbia adjustable ball-bearings to front and rear wheels. $1\frac{3}{8}$ -inch cylindrical perch, made of imported cold-drawn seamless-steel tube, No. 15 gauge. 5-inch cylindrical head with dust-shield. $4\frac{5}{8}$ -inch conical centres. Columbia elliptical, cold-drawn, seamless-steel, tubular front, and semi-tubular rear forks. 28-inch hollow, continuous-steel, cow-horn handle-bar, $2\frac{1}{2}$ -inch drop. Spade handles. One-piece leg-guard. Grip-lever spoon brake. Adjustable step. Kirkpatrick saddle. Tool-bag, with Columbia B. & S. monkey-wrench, screw-driver, and oil-can. Weight, with saddle and pedals on, 42 lbs.

QUALITY AND PRICE. — There are no questions of greater importance to wheelmen than those bearing upon the matters of qualities and prices of bicycles. Recognizing the demand for a machine at a lower cost to a retail purchaser than the highest grade machines, yet embodying as many as possible of the essential qualities of these, we concentrated our attention upon the present machine with a view to presenting the purchaser of a medium-priced bicycle the highest possible value for his money.

CONSTRUCTION. — Great DURABILITY, reasonable LIGHTNESS, exact INTERCHANGEABILITY OF PARTS, and BEAUTY OF OUTLINE, are first among the requisites of any bicycle, of whatever grade; accordingly, for all parts of this, we have taken precisely the same qualities of steel that we use in the corresponding parts of the Expert; and there is no metal but steel in either machine.

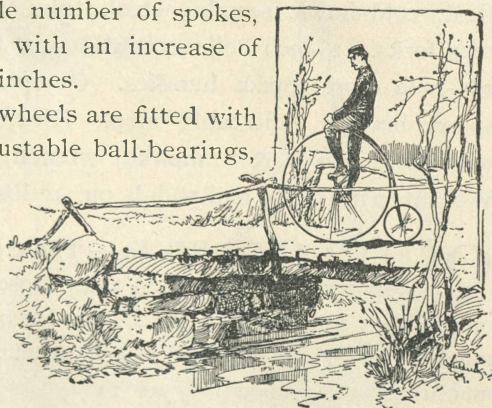
By dispensing with a few of the least essential advantages of our high-grade machines, and by making but *four sizes* and *one finish*, we have been able to put our Volunteer upon the market at a lower price than a wheel of *equal value* has yet been sold at.

The fact that it is a Columbia, with all this implies, and that as such it is backed by our guarantee, will have full weight.

THE WHEELS present no material difference in construction from those of the Expert, though for the sake of lightness we have put a $\frac{7}{8}$ -inch tire on the front wheel. In doing this no strength has been sacrificed, as the new felloe is of equally fine stock and practically the same weight as in the Expert, the section showing a thicker middle to make up for the decrease of diameter.

THE DIRECT-SPOKE principle of construction is employed for the sufficient reason that it has unquestionably proved itself the most durable and satisfactory in the long run for regular road machines. We use an ample number of spokes, 52 on the 48-inch wheel, with an increase of four for each rise of two inches.

BEARINGS.—Both wheels are fitted with our regular Columbia adjustable ball-bearings, whose excellence and thorough reliability are unquestioned; though we furnish the machine with cone-bearings to the rear wheel, when desired, at a reduction of \$5.



The hollow front Forks and the Perch are of a similar form and the same gauge of stock as in the Light Roadster.

THE HEAD is practically the same in form as in the Light Roadster or Expert, though fitted with a single set-screw and a broad-flanged lock-nut to prevent its working loose.

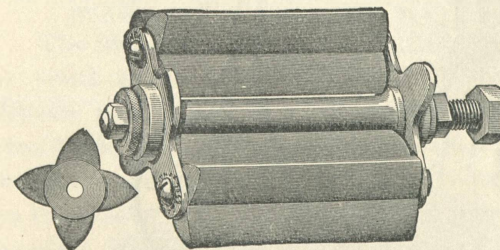
THE HANDLE-BAR is our regular hollow, cow-horn bar. The bore through the head-lug is round and sufficiently large to admit of easily passing in the curved bar. The excess of diameter is filled by a split thimble, and the bar then firmly secured in place.

THE HANDLES, CRANKS, PEDALS, and SADDLE are the same as on the Expert, and these, with the other appointments of the machine, go to make it the best bicycle that has ever been offered at anything approaching its price.

The Columbia Ball-Pedal

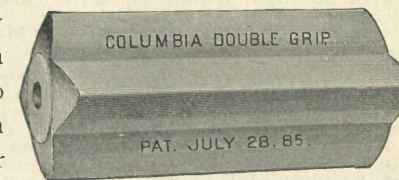
possesses various advantages over other ball-pedals in pattern as well as the carefulness with which it is made.

The end-plates are one piece, and drop-forged. The pedal-frame is completed by a central steel tube, which entirely protects the pin and the bearings. The rods passing through the rubbers are threaded upon the inner ends, and fitted with small nuts, so as to be easily removed and replaced. The pedal pin is tapered, and strengthened at the inner end; and there are two



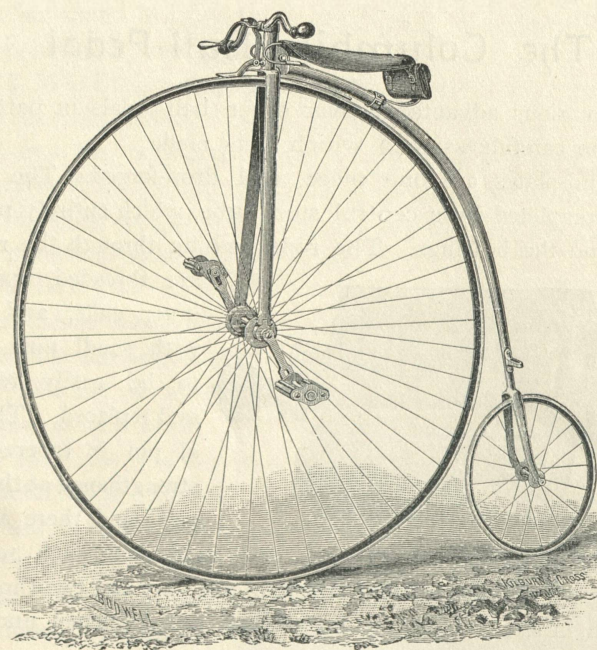
rows of steel balls, eleven at each end, made with such accuracy that by actual micrometer tests they do not vary one two-thousandths of an inch in size. They are rolled and case-hardened under our own processes.

The elastic bars are of our "double-grip" pattern, which affords a firmer hold than any other for the foot, increasing with additional pressure. They turn with sufficient freedom upon their rods to conform readily to the sole of the shoe. The quality of the rubber used in the bars contributes to this effect by its superior elasticity, and its durability is greater than that of the harder rubber used in many other pedals. The elastic form and quality of the bars serve to take up much of the jar which is felt by the feet in riding over rough ground.



While the regular width is $3\frac{5}{8}$ inches in the clear, the ladies' pedal is $3\frac{1}{4}$, and the extra wide, 4 inches.

Thousands of riders are daily testifying to the practical excellence of this pedal. Price per pair, nickeled, \$10.



The Columbia Semi-Roadster.

PRICE, \$75.

For a 50-inch, finish D, with Cow-Horn Handle-Bars, and Kirkpatrick Saddle. Or, with "Double-Grip" Ball-Pedals, \$80.

(For full Schedule of Prices, etc., see page 43.)

BRIEF OF 50-INCH. — Endless moulded rubber tires, $\frac{7}{8}$ -inch to front and $\frac{5}{8}$ -inch to rear. Crescent felloes. 52 and 18 direct spokes, No. 11½ steel wire, with both ends enlarged. 16-inch rear wheel. 3-inch hub-flanges, with 5-inch spread of spokes. Detachable cranks, 4 to 5 inches throw. Parallel pedals, with corrugated rubbers. Columbia ball-bearings to front wheel, cone bearings to rear.

1¼-inch cylindrical perch. 4¾-inch cylindrical head, with cone centres. Elliptical, seamless-steel, tubular front forks, solid rear forks. 24-inch cow-horn handle-bars. Vulcanite handles. Grip-lever spoon brake. One-piece leg-guard. Oblong open serrated step. Kirkpatrick saddle. Tool-bag, with monkey-wrench, screw-driver, and oil-can. Weight, all on, 35½ lbs.

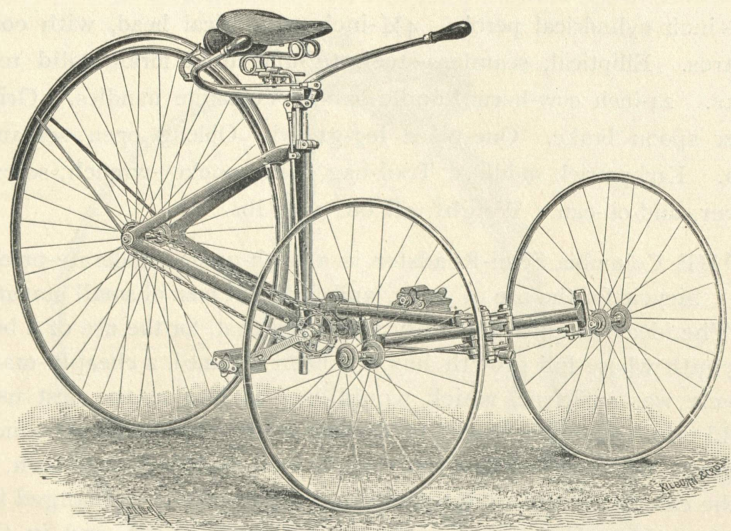
THE Columbia Semi-Roadster is a high-grade, moderate-priced bicycle for the use of boys, and for light men of small stature.

The idea has quite generally prevailed that, for the use of a boy or youth whose full growth has not been attained, a cheaply-made bicycle was sufficient, which would last as long as the first user could ride it, and then might be thrown aside. The better economy, however, will be found in a thoroughly well-made bicycle, which, as in the case of our full-sized machines, may be sold or exchanged for another to good advantage after several seasons' use, and in the meantime can be readily repaired when necessary.

THE HEAD of this machine is drop-forged, of the closed pattern, 4¾ inches high, amply strong to resist the heavy strains to which it is subject, with a firm handle-bar lug, and having its stubs securely pinned and brazed into the tubular front forks.

THE WHEELS are built upon the same principle as those of our Expert, and present the best wheel construction where all kinds of use has to be allowed for. While 46 spokes and ¾-inch felloes are sufficient for the front wheel up to 46 inches, we put 52 spokes and ⅞-inch felloes in the 48 and 50-inch wheels.

BEARINGS. — The front wheel bearings are of our celebrated Columbia ball-pattern, with a single row of balls running in a light but strong bearing-case, and a method of adjustment devised especially for this machine. The crank-boss, or shoulder, is cut out to receive the axle-end, which fits closely into it, and by means of a differential screw the closeness of the crank is easily and positively regulated, and so the relative position of the outer cone to the inner one, thus adjusting the bearing. When the proper adjustment is obtained the crank is secured in its position by a key, drawing transversely through it and across a flattened surface of the axle.



The Surprise Columbia Tricycle.

Price, with "Double-Grip" Ball-Pedals, - \$150.

Price, with "Double-Grip" Parallel Pedals, \$145.

BRIEF.—32-inch driving, 26-inch steering-wheels. Endless moulded rubber tires, 1-inch to driver, $\frac{3}{4}$ -inch to steerers. Crescent felloes. 44 and 24 direct spokes, No. 11½ wire, with both ends enlarged. Copeland folding frame. Wallace dwarf steering-heads. Hollow curved handle-bars, adjustable for height. Vulcanite handles. Adjustable lever-spoon brake. Adjustable crank-and-chain driving-gear. Wallace sprocket-wheel. Ewart forged-steel, detachable-link chain. Detachable Knous cranks. Columbia "double-grip" rubber ball-pedals. Adjustable L seat-rod. Harrington cradle-spring. Knous adjustable saddle. Dress-guards. Tool-bag, with Columbia B. & S. monkey-wrench, screw-driver, and oil-can. Width over all, open, 39 inches; folded, 29 inches. Gear 48. Weight, 74 lbs. Finish, enamel, with nickel tips.

FROM the success it has already met with, and the candidly expressed approval of its riders, we feel justified in asking special attention to the Surprise, with its advantages of construction, and price.

FOLDING ARRANGEMENT.—An important feature of the machine is the arrangement by which the running track may be varied in width from 34 inches down to about 30, and then folding to a width *over all* of 29 inches, enabling it to go through almost any door.

STEERING.—A lever-arm at the bottom of each steering-head is connected by a light rod to a lever pivoted below the main frame bracket, and taking its motion through a connecting-rod attached to the lower end of the handle-bar upright.

WHEELS.—These are made with solid crescent felloes, of good proportion, and pure rubber tires securely cemented in, with direct spokes headed at the felloe and screwing into the forged-steel hub-flanges.

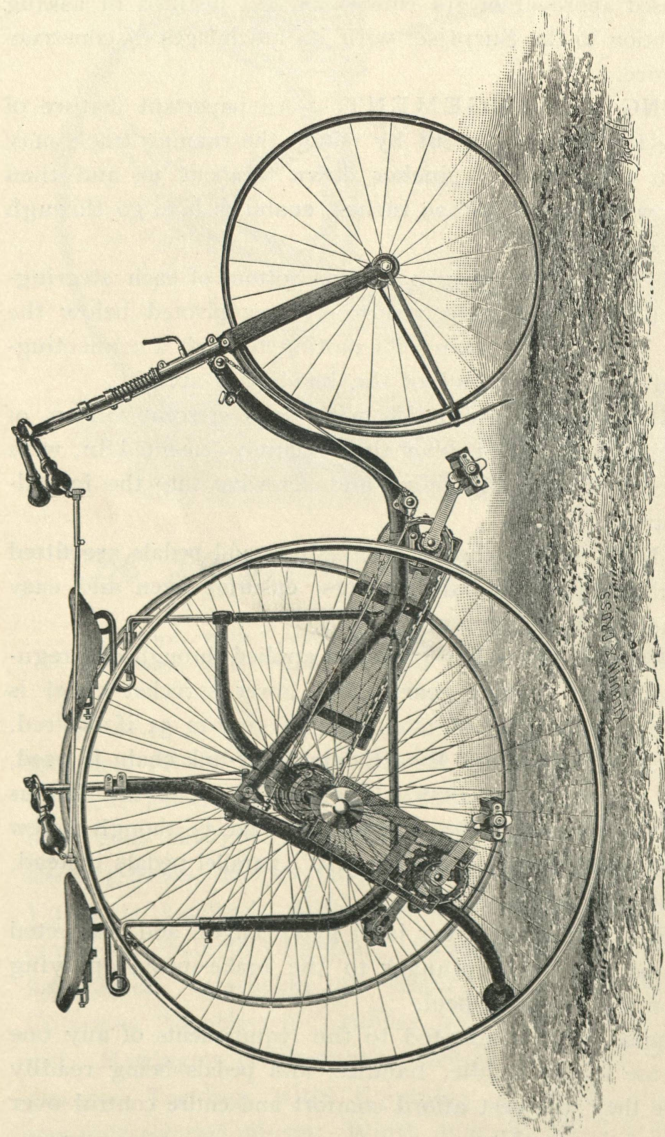
BEARINGS.—The wheels, crank-shaft, and pedals are fitted with Columbia adjustable ball-bearings, ensuring even and easy running, and exact adjustment.

DRIVING-GEAR.—The power is applied through our regular crank-and-chain driving-gear. The lower sprocket-wheel is interchangeable, admitting of a change of gear to 54 if desired. Our well-tested and excellent Ewart detachable-link chain is used, of the same pattern as in 1888. The cranks are of the Knous pattern, and the pedals are those shown on page 33, though a new machine will be fitted with "double-grip" parallel pedals instead, if desired, at a reduction of \$5.

BRAKE.—The brake-lever is of good length, and connected by a lever and adjustable plunger to the brake-spoon, applying directly upon the driving-wheel.

The Surprise may be adapted to the requirements of any one desiring to use it, the saddle, handles, and pedals being readily placed where they will best afford comfort and entire control over the running of the machine.

It is well made, and handsomely finished.



The Columbia Tandem Tricycle.

Price, with "Double-Grip" Ball-Pedals, \$250. With "Double-Grip" Parallel Pedals, \$240.
Weight, 120 lbs.

Columbia Tandem Tricycle.

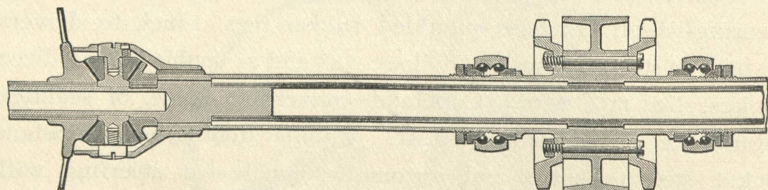
BRIEF. — Two 40-inch driving-wheels, and one 26-inch front steering-wheel. Endless moulded rubber tires, 1-inch to drivers, $\frac{7}{8}$ -inch to steerer. Crescent felloes. 48 and 24 double-butt direct spokes, No. 11½ wire. Copeland convertible frame, of seamless tubular steel. Side balance-gear. Tubular front forks. Copeland socket steering-head, and automatic handle-bar steering, with connecting-rod to rear handle-bar. Hollow curved handle-bars, adjustable for height. Vulcanite handles. Adjustable L seat-rods. Kirkpatrick saddle, rear; Knous adjustable saddle on Harrington cradle-spring, front. Copeland adjustable double-action band-brake. Central crank-and-chain driving-gear. Wallace sprocket-wheels. Ewart forged-steel, detachable-link chain. Knous detachable cranks, $5\frac{3}{4}$ to $6\frac{3}{4}$ inches throw, rear; 5 to 6 inches throw, front. Columbia "double-grip" rubber ball-pedals. Columbia adjustable ball-bearings all around. Foot rests. Lantern bracket. Wire dress-guards. Steering-wheel shield. Tool-bag, with oil-can, screw-driver and wrenches. Width of track, 33 inches; total width, 40 inches. Gear 47. Weight, all on, 120 lbs. Finish, enamel with nickel tips.

IN designing our Columbia Tandem we have aimed at combining all the features presented by previous types which experience has shown to be desirable, with such improvements and new ideas as the ingenuity of our inventors could devise for the perfecting of a double machine. The result is seen in a front-wheel handle-bar steerer, which two ladies can ride, capable of being steered and controlled by brake from either seat, and readily convertible into a handle-bar steering "single."

THE WHEELS are proportioned for strength, steadiness in running, and the taking up of vibration. They are constructed upon the direct-spoke principle, as best adapted for use where special lightness and great rigidity are not so desirable as dur-

ability. The crescent felloes are ample in their dimensions, and the tires of the best rubber, very securely cemented in.

AXLE.—The double axle is made particularly strong, of seamless-steel tube of heavy gauge. The inner axle carries both wheels, working through our improved Whitehead and Pope balance-gear



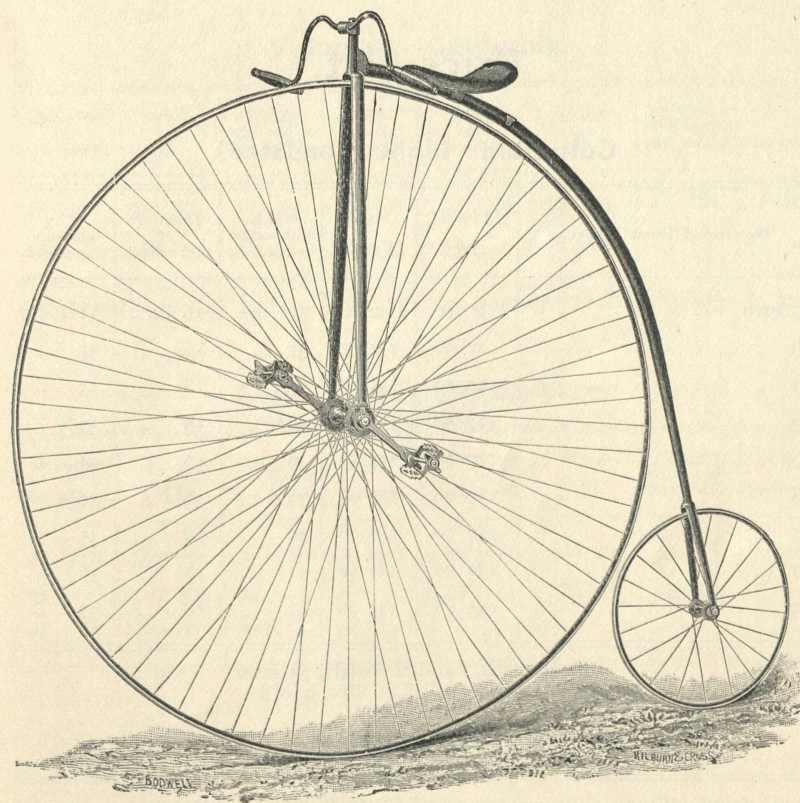
at the left side, to which is also attached the tubular outer section. This receives the bearings of the main frame, the sprocket-wheels of the driving-gears, and the drum upon which the brake-band acts.

DRIVING-GEAR.—The driving mechanism is our central crank-and-chain arrangement, with cranks of our Knous pattern, carrying Columbia "double-grip" ball-pedals. While the rear cranks allow $5\frac{3}{4}$ to $6\frac{3}{4}$ inches throw for power, we regularly put 5 to 6-inch cranks at the front. The use of our Wallace sprocket-wheel admits of a change of gear, making it either 40, 43, 47, 52, or 55, and the Ewart chain may be readily lengthened or shortened, and any links replaced.

AUTOMATIC STEERING.—The Tandem presents our own improvements on the automatic double handle-bar steering. A cam-shoulder at the lower end of the steering-head automatically retains the steering-wheel in a plane parallel with the driving-wheels, with a tension regulated by an adjustable spiral spring above.

When desirable, the steering may be done from the rear seat by attaching a light rod between the handles on the left side.

ADJUSTMENTS.—Ample adjustment for riders of different reach is provided by the movement of the seat-rods and the handle-bar straight arms up and down in their sockets, and by the movement of the saddles backward or forward on the seat-rods. Foot rests are provided for both riders, wire dress-guards to cover the chains and gears, and a light sheet-steel guard over the steering-wheel.



The Columbia Racer.

Price, complete, \$140. Weight of 55-inch, $22\frac{1}{2}$ lbs.

THE phenomenal success of the Columbia Racer has been far greater than that ever achieved by any other racer, and has served to advance the good reputation of Columbias; its riders having secured world's records for from one-quarter to twenty-four miles, inclusive; the mile accomplished in $2.29\frac{1}{4}$, and the astonishing record of 22 miles, 150 yards, within the hour.

Price-List.

Columbia Light Roadster.

Diameter of Front Wheel.	Finish M	Finish H or L	Weight with saddle and pedals.	Diameter of rear wheel.	Leg measure. See page 2.
47 inch	\$120 00	\$130 00	36 lbs.	16 inch	31 inch
49 "	122 50	132 50	37 "	16 "	32 "
51 "	125 00	135 00	38 "	18 "	33 "
52 "	127 50	137 50	38½ "	18 "	33½ "
53 "	127 50	137 50	39 "	18 "	34 "
54 "	130 00	140 00	39½ "	18 "	34½ "
55 "	130 00	140 00	40 "	18 "	35 "
57 "	132 50	142 50	41 "	18 "	36 "
59 "	135 00	145 00	42 "	18 "	37 "

Fitted with Parallel Pedals, \$5 less.

Expert Columbia.

Diameter of Front Wheel.	Finish D	Finish A or C	Weight with saddle and pedals.	Diameter of rear wheel.	Leg measure. See page 2.
46 inch	\$105 00	\$115 00	42 lbs.	16 inch	31 inch
48 "	107 50	117 50	43 "	18 "	32 "
50 "	110 00	120 00	44 "	18 "	33 "
52 "	112 50	122 50	45 "	18 "	34 "
54 "	115 00	125 00	46 "	18 "	35 "
56 "	117 50	127 50	47 "	18 "	36 "
58 "	120 00	130 00	48 "	20 "	37 "
60 "	122 50	132 50	49½ "	20 "	38 "

Fitted with Parallel Pedals, \$5 less.

Volunteer Columbia.

Diameter of front wheel.	Finish K	Weight with saddle and pedals.	Leg measure.	Diameter of front wheel.	Finish K	Weight with saddle and pedals.	Leg measure.
48 inch	\$87 50	41 lbs.	32 inch	52 inch	\$92 50	43 lbs.	34 inch
50 "	90 00	42 "	33 "	54 "	95 00	44 "	35 "

Fitted with Parallel Pedals, \$5 less. Cone Bearings to Rear Wheel, \$5 less.

Columbia Semi-Roadster.

Diameter of front wheel.	Finish D	Weight with saddle and pedals.	Leg measure.	Diameter of front wheel.	Finish D	Weight with saddle and pedals.	Leg measure.
42 inch	\$65 00	33½ lbs.	29 inch	48 inch	\$72 50	35 lbs.	32 inch
44 "	67 50	34 "	30 "	50 "	75 00	35½ "	33 "
46 "	70 00	34½ "	31 "				

Fitted with Ball-Pedals, \$5 extra.

Safeties.

COLUMBIA LIGHT ROADSTER SAFETY, \$135; with parallel pedals, \$130.
COLUMBIA LADIES' SAFETY, \$135; with parallel pedals, \$130.
COLUMBIA TANDEM SAFETY, \$200; with parallel pedals, \$190.

Tricycles.

SURPRISE COLUMBIA, \$150; with parallel pedals, \$145.
COLUMBIA TANDEM, \$250; with parallel pedals, \$240.

Rationals.

EXPERT, Finish D, 50-inch, \$115; 52-inch, \$117.50; 54-inch, \$120.
VOLUNTEER, Finish K, 50-inch, \$95; 52-inch, \$97.50; 54-inch, \$100.
Fitted with parallel pedals, \$5 less.

Classification of Columbia Finishes.

- A. Every part nickeled.
- C. Felloes and spokes enameled, balance nickeled.
- D. Perch, forks, felloes, and spokes enameled, balance nickeled.
- H. Felloes enameled, balance nickeled.
- K. Perch, forks, and wheels enameled, balance nickeled.
- L. Felloes and spokes to outer crossing enameled, balance nickeled.
- M. Perch, forks, felloes, and spokes to outer crossing enameled, balance nickeled.

Columbia Nickel Plating.

Its superiority is universally acknowledged, and to this excellence is largely due the reputation our machines have acquired for unequalled elegance and endurance of finish. Every part plated is finely polished, well coated with copper, then covered with an extra thick deposit of pure nickel, and carefully buffed. Even the best nickel plating, however, requires some care. All nickeled parts should be wiped dry when the machine is put away, and occasionally rubbed with polishing paste.

Columbia Enamel.

Enameling has become the favorite with most riders, as it is handsomer than painting, and is not affected by dampness, like burnishing, or even nickeling. After repeated tests of *all* the accessible enamels in use we produced and applied our COLUMBIA ENAMEL, submitting it to the actual test of long every-day use, as well as the severest tests of the shop, and with equally favorable results. Our process of enameling is very thorough, every part being polished, then successive coats of enamel carefully applied with a brush, and each baked on in an oven. Finally, it is burnished sufficiently to give it a lustre.

Rationals.

To meet a call for machines combining as far as possible the advantages of the regular bicycle and the Safety, we offer a line of "Rational" Experts and Volunteers, with 22-inch rear wheels; and furnish them in 50, 52, and 54-inch sizes, only in D and K finishes respectively, at \$5 additional to the prices of the regular machines of the same size and finish.

Columbia Cement.

The unequalled staying qualities of our tires, as put on under our 1890 method, are in no small measure due to the cement we now use. Always convinced that this is the best process and that the shortcomings developed in some cases have been the direct result of poor grades of cements which have been extensively sold, it has been our constant aim to provide ourselves with the highest grade to be had.

We congratulate ourselves on having secured a special quality, and offer it as the best now on the market.

Price, 25 cents per box; \$1 per pound.

Progress.

The Columbia of 1880 was at the head of its line then; but it is far from being a sample of what Columbias are in 1890.

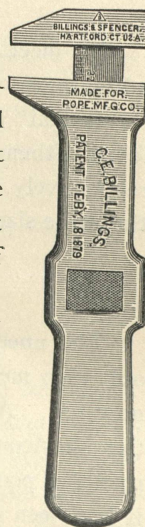
Progress in every possible direction is our constant aim, and our 1890 machines show the advance in one year in various details.

We have made such improvements as we have been able to, and propose making no further changes during this year.

In the case of the Expert and Volunteer Columbias, where there is little room for other improvement, we have made a reduction of \$10 each in price. They are the cheapest machines for their values on the market to-day.

Columbia B. & S. Wrench.

In order to equip our machines in the most satisfactory manner possible, in the matter of wrenches as in all other points, and to furnish our agents with the best that can be had for use on bicycles and elsewhere, we contracted with the well-known makers, Billings & Spencer, to design and make solely for us a pattern of wrench affording all the advantages of their old one, which until this time had been without a superior for this purpose, with an improvement in shape and length. This wrench is 5 inches long, and will be found in all respects the best yet. Price, blued, 75 cents; nickeled, \$1.



The Acme Oiler

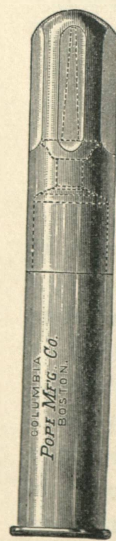
consists of a tube for holding the oil, fitted with an Acme tip which can be unscrewed when it is necessary to refill the oiler. The tip is made with a spring valve, which permits but a few drops of oil to flow out at each stroke. The form and construction of the oiler are intended to ensure a saving of oil and greater cleanliness than is the case with any other that can be so handily used.

A cap of the same diameter as the body of the oiler fits over and protects the tip and affords a double preventive of leakage over garments or tool-bag.

Our new pattern for this season is smaller than before, more conveniently carried, and with a flat base upon which it can stand upright.

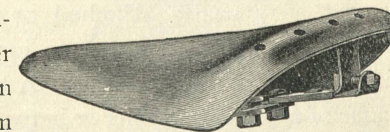
Flattened surfaces upon the cap render it more easy to remove. We consider it in all respects superior to the original can.

The shape, and nickel finish, make it the handsomest oiler in use. Price, 50 cents.



The Knous Adjustable Saddle

presents several important improvements in construction which make it very light, strong, elastic, and easily adjustable. The frame consists of two light, but amply strong, sections of flat spring steel, the one attached firmly to the cantle, to which the flexible leather top is riveted at the back, and then bent below at a right angle to form an adjusting joint with the other section, which, extending the length of the saddle, has the leather riveted to it at its forward end.



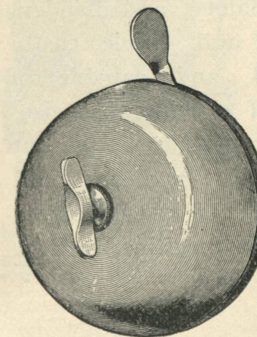
The adjustment between the sections of the frame, and by which the proper tension of the seat is preserved, is positively governed by a square-headed set-screw passing freely through the bent-up end of the lower section and into a threaded hole in the upper, with its reinforcing block beyond. Price, with nickeled straps, \$4.

The Perfection Alarm

will fit any machine made, is fastened to the brake upright, and is out of the way, and unaffected by headers. It will not rattle.

The spring to operate the alarm is contained within the bell, and is wound up by a button on the outside of the gong.

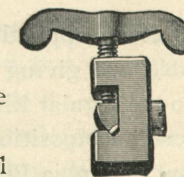
The alarm is given by a slight forward pressure on the lever, which releases the spring movement. Price, nickeled, \$2.50.



The Columbia Spoke-Grip

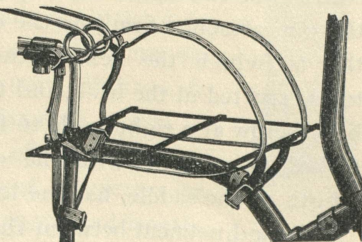
is the simplest grip in use, and is entirely effective in its working.

It is drop-forged, with case-hardened jaw; will not slip when properly placed upon the spoke, and will not wear out easily. Price, nickeled, \$1.

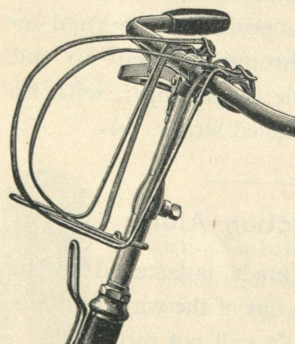


Columbia Luggage Carriers.

For convenience in carrying garments or other articles on a tricycle, tandem, or safety, we have made light carriers of steel and leather, very easily attached or removed, and strong enough to carry fifty pounds, to be fastened to the frame of a single tricycle, or between the saddles on the tandem tricycle, or over the steering-wheel of the velocé. The machine for which it



is desired should be specified in ordering. Price of either tricycle carrier, \$2. Velocé, \$1.



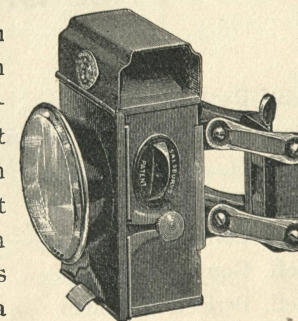
A special pattern for the Light Roadster Safety, Ladies' Safety, and Tandem Safety, is neat, light, and simple, easily attached or removed, and capable of carrying a package of considerable size. Attached to the handle-bar, it is out of the way of the wheel and dust, and does not necessitate the removal of any part of the machine, nor the lantern. In ordering, specify for what machine desired. Price, \$1.

Columbia Black

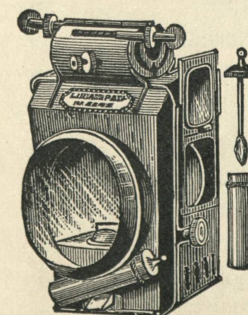
is easily applied with a soft brush. Self-drying, tough, and durable, and giving a fine jet-black lustre. No liquid enamel is equal to the regular kind which we put on our machines, as this is of different composition and must be thoroughly baked on (see page 44), but Columbia Black has no superior among bottled enamels. Price per bottle, with brush, 50 cents; or, by mail, in patent mailing-case, 70 cents.

The Invincible Lantern

is the most satisfactory that we have seen of domestic or foreign make, for use on safeties and tricycles. It has an adjustable grip-socket to fit the clip of almost any machine, attached to the lantern with a parallel link and spring arrangement which reduces vibration to a minimum and checks sudden jars. The glasses and reflector are good-sized, and it is a splendid lantern in every respect. Price, japanned, \$6.



King of the Road Lanterns.



We carry some of the most desirable forms of these popular hub lanterns. They are of good size and throw a powerful light, and are of the best construction in all particulars. Each is made with beveled glass, and a strong, well-placed reflector. Prices: No. 2, large, nickel-plated, with patent bearing, \$7.50.

No. 1, small or medium, nickel-plated, plain bearing, \$6.50.

No. 1, medium, japanned, plain bearing, \$5.00.

Price-Lists and Testimonials.

In order not to encumber this Catalogue with matter not properly belonging to it, we publish our Price-List of Parts in a separate pamphlet, and send it on application to any who desire it.

If we bound it in here, as many others do, our Catalogue would be more than twice its present size — already larger than any other, though we have condensed it as much as we can, still doing justice to our full line.

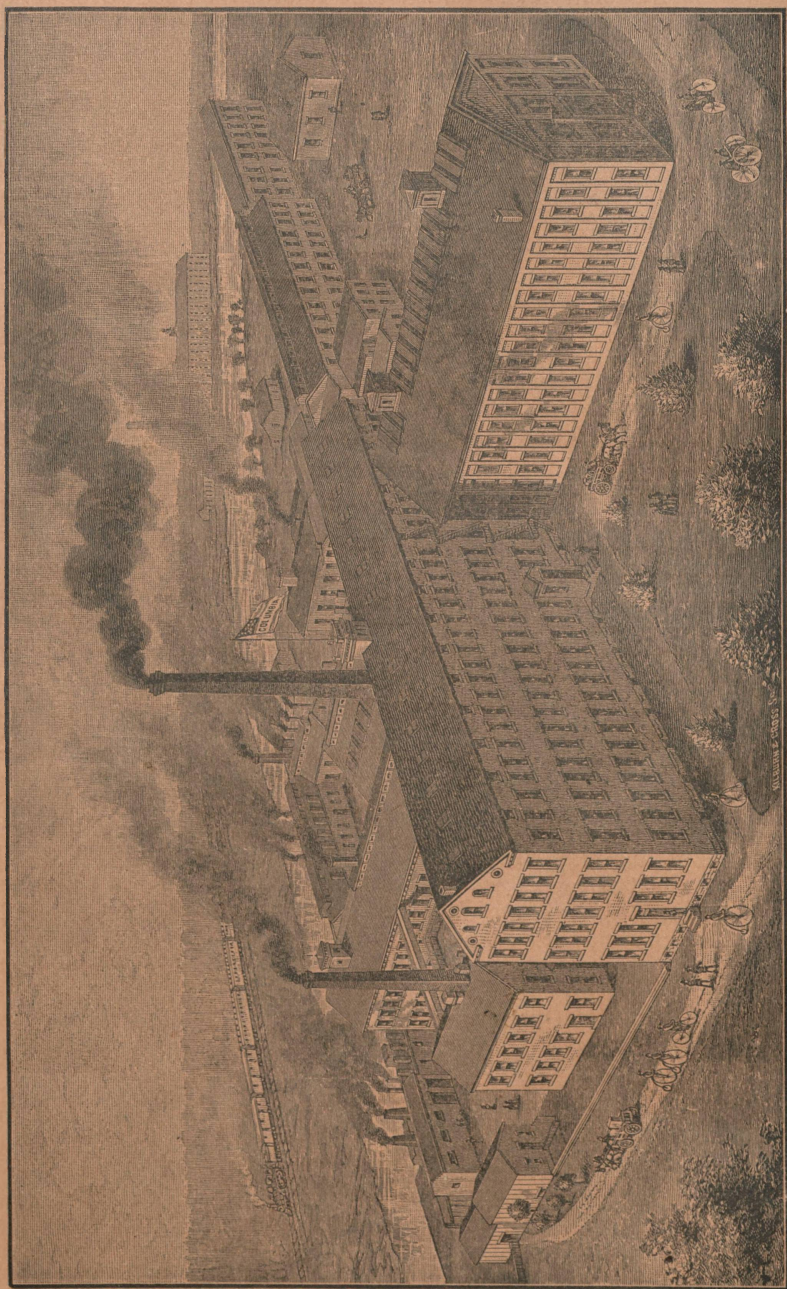
Price-List of Sundries.

Anti-Rust, per bottle	\$0.25
Bag, flat, for holding wrenches, etc.	.50
Bag, Handy Tool, cigar-case shaped	1.50
Bag, Handy Tool, round	1.50
Bag, Columbia	1.50
Bell, Gong	.50
Bell, Perfection Alarm	2.50
Bell, Peerless Automatic	.25
Bell, Standard No. 0, small size, flat spring clapper	.50
Bell, Standard No. 2, medium size, flat spring clapper	.50
Bell, Standard No. 3, small size, swing clapper, closed base	1.00
Bell, Standard No. 4, medium size, swing clapper, open base	1.00
Bell, Standard No. 5, medium size, swing clapper, closed base,	1.25
Carrier, Lamson, Bundle, 75c.; Book	1.00
Carrier, Tricycle Luggage, \$2; Veloce Luggage, Light Road- ster Safety, or Tandem Safety, attaching to steering-head,	1.00
Cement, for securing tire to the felloe, per box, 25c.; per lb.,	1.00
Cement, Wahnun, for mending cuts in tires, per bottle	.25
Enamel, Columbia Black, per bottle, 50c.; by mail	.70
Enamel, Rudge, per bottle	.50
Enameline, transparent, for preventing rust, per bottle	.25
Graphite, for lubricating chains and bearings	.25
Handles, "Double-Grip" (state for what handle-bar), per pair,	3.00
Handles, Spade (state for what handle-bar), per pair	4.00
Lantern, Captain	2.50
Lantern, Invincible, japanned	6.00
Lantern, King of the Road. (See page 49.)	
Lantern Fastener, for attaching to head, nicked	1.00
Lock, Merrill's Automatic, 75c.; Whitten's "Best" Link	1.00
Metal Polish, per bottle	.25
Oil, for lubricating, pint cans, 50c.; quart cans	.75

Oil, for burning, sperm, pint cans	\$0.55
Oiler, Paradox	.25
Oiler, Acme	.50
Padlock and Chain, No. 1, brass, 50c.; No. 2, brass, small, with flat key	.50
Padlock and Chain, Yale, bronze, \$1; nicked	1.25
Padlock and Chain, American Bicycle Check, flat	.75
Pedals, Ball, Columbia "Double-Grip" per pair (state crank to be fitted)	10.00
Polishing Paste, for cleaning nickel, per box, 15c., and	.25
Saddle, Kirkpatrick, for regular bicycle (state what machine)	6.00
Saddle, Kirkpatrick, for tricycle or safety	7.50
Saddle, Knous Adjustable	4.00
Saddle, Ventilated Suspension, \$1; Long Distance	1.00
Spring, Columbia Swing	3.00
Step, Columbia Adjustable	1.00
Step, Columbia Adjustable, Volunteer pattern	.75
Stockings, woolen, ribbed, seamless, with shaped legs, green, blue, black, per pair	.75
Suspenders, for stockings, per pair, 35c., 50c., and	1.00
Whistle, Gem, four sizes	.25
Wrench, Columbia B. & S., blued, 75c.; nicked	1.00
Wrench, spoke-grip, drop-forged steel, nicked	1.00
Wrench, spoke-grip, King Dick	.50

We do not wish to open any small accounts, as it causes such an amount of unnecessary and expensive detail; we therefore request that all parties ordering sundries, parts, repairs, etc., will send CASH IN ADVANCE. If too much money is sent, the balance will be returned.

We publish a complete "Price-List of Parts" of all our machines, which we will send to any address on receipt of a stamp. Also a pamphlet on the "Choice, Care, and Repair" of a cycle, and a circular affording some hints to ladies on riding and on "What to Wear."



THE BARTA PRESS, BOSTON.