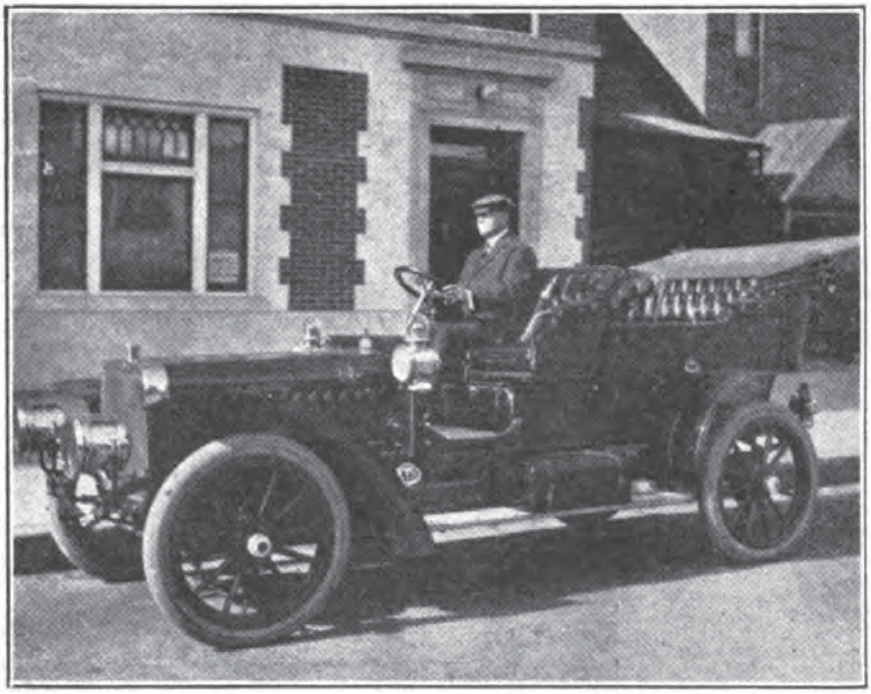
The Automobile for the Physician

Its Advantages



Dr. Geo. H. Stover in his Model U. Light Six Cylinder Stevens-Duryea.

THE DOCTOR'S AUTOMOBILE: WHY AND WHICH?

Wherever a group of physicians is seen engaged in conversation, you may be sure that one of two topics is under discussion: The first topic takes up the abstruse, obscure, or otherwise interesting features of diagnosis, treatment, and prognosis as met with during the daily rounds; the second, over which there is a far greater amount of argument, relates to the doctor's means of locomotion. The feats performed on the high gear bid fair to become a more favorite subject for the raconteur than in former times was the size of the fish that got away.

A very brief canvass of the profession is sufficient to establish the fact that every physician wants an automobile; those who do not already possess them are counting the days until they are enrolled upon the police magistrate's black list.

The "why" of the doctor's automobile has an answer consisting of several parts. In the first place, the physician who makes his calls in an auto is able to make many more visits in

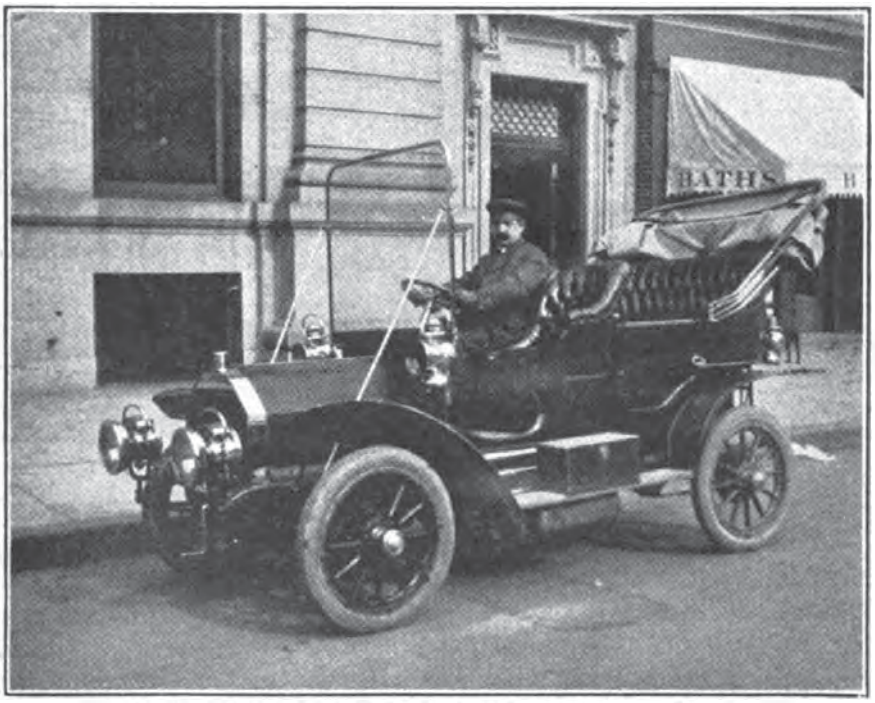
a given time than if he were driving a horse, and I believe that the use of the street cars is the slowest of all means. I perhaps do not know much about this from experience, for I do not make any calls, but I do know that I can get to any of the hospitals, make my X-ray examination and return to my office in the time that I would spend waiting for cars at either end of the route.

From a humanitarian standpoint everyone who can use an auto should do so, simply to spare a dumb animal from slavery. No thinking person enjoys profiting from the servitude of a helpless animal: it always seemed cruel to drive a horse over the rough car tracks, pound his hoofs over the unyielding asphalt of our streets, tie him to a post to stand exposed to heat or cold, and unless the humane owner cares for the animal personally, to permit him to be the subject of neglect, carelessness or abuse so often the case with hired hands.

When one is sick or suffering, one wants his physician to come without delay. Would it take very long for a patient who is in agonizing pain to decide which man he will call, the man who has to hitch up a horse and drive a few miles, or the man who cranks up his machine and comes on the wings of the wind?

Another feature of the use of the auto, and one that no physician, of course, would deliberately consider for a moment as being worthy of his highly ethical notice, is the fact that the subconscious mind of the great public from whose numbers the physician draws his clientele, gets a different impression of the auto driver than it forms of the man who makes his rounds on foot, or of the one who ambles about in a one-horse shay, and that impression is that this man is evidently prosperous and up-to-date, hence he must have been able to "deliver the goods" to those who have called upon him for his services. Some of the laity are so constituted that they will choose, as between two physicians, that one who approaches their domicile crowned with the dignified and awe-inspiring "plug" hat; not that I would for a moment advise the auto user to add a high hat to the equipment which he must purchase in addition to paying for the body, wheels, engine and freight. How embarrassing it would be to one so splendidly "equipped" if his wild burst of speed upon some errand of mercy were interrupted by an excited hail from some dwelling, within whose portals he is requested to officiate at a christening or a sudden wedding. Imagine his confusion, nay, indignation, at the mistake! But, just the same, it was the "equipment" which caught the eye in this hypothetical case.

The possession of an auto is a constant temptation to its owner for more "out-of-doors." For the man who spends hours every day in his office and in sick-rooms, it is the greatest of health conservers. It will coax you away from the dust, smoke and germ-laden air of the town, out into the pure air of the country, where, flying at ease over the smooth country roads (and there are many of them hereabouts) the lungs draw in deeply the clean, invigorating element; the eye is rested and renewed by the change from poring over books and peering into the foul cavities of diseased mortal bodies; here how pleasant to view the wide stretch of nature spread before



Dr. Robert Levy in his Model R, Four Cylinder Stevens-Duryea.

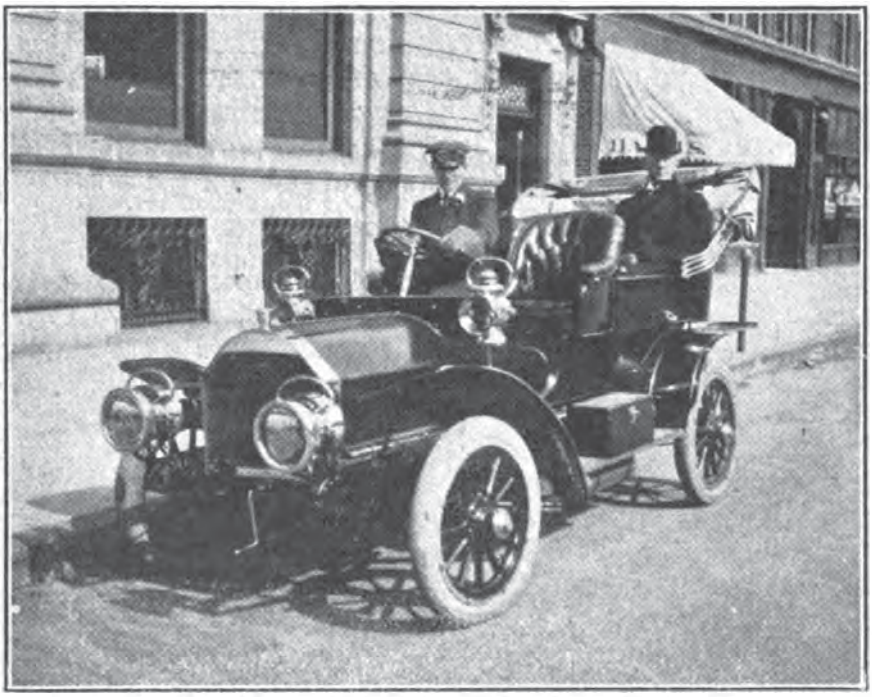
you, from the rolling plains, through the fertile valleys, along meandering streams whose banks are dotted with the pleasing outlines of cultivated areas, wild vegetation and comfortable farmhouses, out to the purple foothills and the snow-capped peaks beyond. The mind is freed from the thought and worry and responsibility of the work of the day past and to come, for no man can run an auto and keep his mind upon prosaic things. The soft hum of the engines, the cheery, reassuring, comfortable purring of the exhaust, the beautiful new scenes constantly coming into view, and above all, the heavenly sense of swift, easy gliding motion, all combine to environ one in a sea of exhilaration and well-being attainable by no other

means on earth. Yet never becoming monotonous, for there is to be encountered the sharp bump of the ditch bridge always to be found in the smoothest stretches, the furious onslaught of the hospitable watch dog, who seems so often to be a "goner," but who is so very hard to "get." Then there is the mild excitement attended by passing through a flock of hens, whose wild antics are so suggestive of those of the feminine bipeds of the city street. Fortunately, a chicken bone has never been known to puncture a tire.

Then comes the question, Which? In the first place, no car will last forever; but a good one will last longer than a cheap one. No car will run its life without repairs, but a good one will need fewer repairs than a poor one. It should not be too light to be substantial, and it should not be so heavy as to be clumsy, or to make unnecessary weight to haul around. The less complicated the better. The electric is most useful for town use, confined to the making of visits. It has a positive power; it does not depend on a flywheel to keep it going; it has no valves; it does not need to be cranked to start it; there is very little soiling of the hands or clothing in operating it; it has no water radiator to freeze in winter; it has no cylinders to overheat in summer; it is the easiest car for a lady to operate. The batteries are the main source of expense; they are delicate, require frequent examination as to depth of electrolyte, specific gravity of electrolyte, condition of the elements of the cells, and have to be cleaned of sulphite at times; it must be carefully charged, as improper charging will completely ruin the batteries; it must not be run down too low, or the batteries will be spoiled; it must not stand idle too long without being charged. And a new set of batteries will be needed every two years of ordinary use. With an enclosed electric, the machine may be used in any kind of weather and the operator will not freeze, and neither will the machine freeze up.

I know very little about the present steam machines, except that it takes time to steam them up. Unless they are very different from the early type I had some years ago, I would not have one as a gift, for use in town. They all have a more or less open fire in the interior of the machine, and that is not conducive to comfortable thoughts while riding around in a windy country. They are speedy; they develop an unlimited power quickly and apply it positively and are great hill climbers. The power is continuous, and not by means of a series of explosions, and on this account should be relatively easy on frame and tires.

Take it all in all, the gasoline auto is the most practical all-round machine for the doctor. It is not tied down to the vicinity of an electric-charging plant, as is the electric; gasoline for the engines and dry cells for the spark coils may be purchased anywhere. It does not require any time for "steaming up." It is possessed of a wide range of speeds; it can stand idle without expense or deterioration. The air-cooled and the water-cooled cars have each advantages of their own. The water-cooled car has to carry the extra weight of water in the radiator, and it will freeze; liquid mixtures which will not freeze may be used, however. The water-cooled engine is maintained at a more even temperature than is possible with the air-cooled. On the other hand the air-cooled machine can be made lighter.



Dr. W. B. Craig in his Model R. Four Cylinder Stevens-Duryea.

Two cylinders are better than one, four are better than two; six cylinders are better than four. The amount of gasoline consumed increases with the number of cylinders, but not in direct ratio. In one, two and four-cylinder cars a large flywheel is used. This is set in motion by the engine. As the power applied by this number of cylinders is intermittent, the momentum of the flywheel is depended upon to pull the engine on over during its periods of inaction, or between explosions; it is the momentum of the flywheel that keeps the

car going; if it slows down too far, the car stops. For this reason in taking a hill the car must take a run in order to gain enough momentum in the flywheel to keep the car going up. This is dangerous on mountain roads, or in going up hills in which there are sharp turns, on account of meeting obstructions or approaching vehicles. If the hill is too long for the momentum to carry it up, the incline must be taken on the low gear. In doing this the engine must revolve many more times in going a given distance and the water in the radiator is apt to overheat, the cylinders get too hot and the pistons stick. These objections apply much more to one and two-cylinder cars than to the fours. In the six-cylinder engine, the power is applied practically continuously; a heavy flywheel is not needed, and this difference in the weight of the flywheel makes a difference in the weight of the car. By reason of this continuous impulse of power the sixes may be made to run much slower on the high gear when traversing a level, thus saving the shifting of gears, and making a lower consumption of gasoline. I do not believe that any six-cylinder runabouts have been made. A light runabout of twelve to fourteen horsepower, with two cylinders, opposed, shaft-driven, the engine suspended from three points, I believe to be the most practical car for the doctor who wants a car simply for professional calls. The car is light, speedy—it will travel thirty miles an hour; is not expensive as to first cost, and the cost of maintenance is probably less, and certainly not more than the upkeep of one horse; besides this, it is ready for duty at any time. It is not a touring car, as there is room for only two passengers, yet it will take two people anywhere that the larger cars will go; not so fast as some of them, and on the longer hills it will have to travel on the low gear a good deal, and there is jolting due to short wheel base, but for a doctor's car, ready for service any day, or all day and all night, an auto of this kind will enable the physician to make his calls quicker; to make more calls; give him the satisfaction that comes of having a tireless steed, and will be to him a tonic for mind and body.

If one wishes a car more adapted for touring purposes, and that may still be used for making professional rounds, then let him take one of the lighter four-cylinder touring cars, the tonneau of which may be detachable or fixed, or 20 to 30 horsepower, and 3-point suspension of power plant is important. The way to choose from the vast number of cars on the market is: Let the agents show you their cars on trips to Golden, Morrison or Sedalia; then see what the car will do in threading busy streets; how slow it will go and keep going;

how much changing of gears and monkeying with the clutch is needed; find if the gear-change system is simple, and if the gears can be changed without stopping to consult a diagram and take half a dozen observations of slots and notches. When you have found one that looks good to you, take a ride with some friend who owns one, preferably a car that has been run a few months; notice how much it rattles and squeaks; in other words, does the car in use run as well as the car that has been shown you; find out what provision has been made for taking up wear on bearings, valves, etc. Don't let your friend suspect that you are thinking of buying a car, for if he finds that out, you will learn that any owner of a car becomes the most acute jockey imaginable in showing up its good points and forgetting and covering up its faults.

We do not intend to lie about our autos; indeed we don't, but we are so pleased with them that we cannot see their faults. G. H. S.

THE MODERN TOURING CAR.

In view of the lack of correct information concerning the mechanical principles which must be considered by the prospective owner of an automobile, particularly as relating to the question of one, two, four and six cylinders, the writer will endeavor to make plain the differences between the various types.

The six-cylinder is the latest, and will undoubtedly be the last, development along these lines, and it will be more convenient to argue with the six-cylinder power plant as a basis. Here we are discussing the touring car, capable of carrying several persons over considerable distances, not the runabout. While the six-cylinder idea is comparatively new, it has been well tested, both by the manufacturers and by careful, conservative buyers who understand the mechanical principles involved, and we believe it to be the best type of engine that can be employed in an automobile for touring purposes.

Its effectiveness on the road depends absolutely on correct construction. This is the point that the intending purchaser of a six-cylinder car should most thoroughly investigate. For the increased number of parts that must be kept in alignment in a six-cylinder engine demand that the mechanism be relieved of all shock, twist or jar.

The six-cylinder type, like many other new things, has aroused a great deal of discussion. Some critics fear that it will bring greater weight, cost and complexity, while others

appear to think that it will obliterate the last drawback of motoring. The truth lies between them. The sixes are not perfection, but they are such a long step in that direction beyond other high-power cars that they are fast displacing them already.

We do not mean that the six will take the place of all other types; it will hardly affect the smaller ones at all. Even the one-cylinder cars, which are not made of more than 10 horsepower, will still be used by many. Their vibration is objectionable, as are their small size and limited power, but the man who cannot buy anything better must take a single cylinder car or else do without. Those, however, who can afford a higher first cost and who want larger, finer and more powerful cars, will graduate from the single-cylinder class to the two, four or six, depending on the intensity with which they want them.

THE SIX VS. THE HIGH-POWER FOUR.

As soon as one decides to secure a high-power car, his choice narrows down to the four and the six. And when this point is reached, the six will be found to have many decided advantages.

It runs more slowly on high gear.

It picks up speed faster and more easily on the throttle.

It has much less vibration.

It runs with a silence unknown to the four.

It makes gear-shifting almost unnecessary.

It is remarkably better for hill-climbing.

It weighs less per actual delivered-to-the-rear-wheels horsepower than the corresponding four.

It is easier to crank.

It costs less for tires and repairs.

There is no mystery in the matter. The explanation of practically all of these advantages of the six may be put in one sentence: The six-cylinder engine has continuous torque, which, as every engineer knows, the one-cylinder, two-cylinder and four-cylinder engines cannot possibly have. The expression, "continuous torque" sounds very technical, but it simply means that the engine delivers power continuously, instead of applying it at intervals and in jerks.

Take the illustration of the ordinary grindstone operated by a pedal. The operator gives it a start by hand and then presses down with his foot. The momentum of the heavy stone carries it around until the pedal comes up, and then the operator presses again, and so on, applying power half the time. Since every down or power stroke is followed by an up

or idle stroke, we have intermittent torque again, like riding the bicycle and using only one foot. But the grindstone runs more smoothly than the bicycle under the same conditions, because the greater momentum of the grindstone bridges over the intervals between the power strokes.

Now apply this to the automobile. The principle is the same, but we replace foot power with gasoline engine power. All gasoline motors deliver the power by explosion, like shooting a ball out of a gun, and the explosions are very severe. If there were no way to smooth out the violence of the blows, it would be unendurable to ride in the cars on account of the vibration, and the engine would soon tear itself to pieces. So designers have resorted to the old expedient of the flywheel, which works like the grindstone. Power is required to speed it up, but when once turning fast, it tends strongly to maintain the same even speed, and cannot be instantly stopped or accelerated. Thus it serves as a reservoir for the power generated by the motor, and keeps the car moving evenly between the power strokes. But at best the flywheel is only a necessary evil—an increased weight, difficult of control, that must be carried. The smaller and lighter it can be made the better for the car, so long as it is heavy enough to do its work.

The necessary weight is determined by (1) the violence of the power impulses, and (2) the length of time between them.

The greater the force of the explosions, and the longer the interval between them, the heavier must be the flywheel. This is why a flywheel that will make a high-power four run smoothly at high speed, when the explosions follow each other very quickly, does not keep it from jerking when the engine is running slowly; that is, when the explosions are farthest apart. It is obvious that the milder the force of the explosions, and the closer together they come, the smaller and lighter the flywheel may be made. The automobile motor has been developed steadily in this direction, as will be seen by a glance at the four types.

In the one-cylinder engine the power is applied only one-fifth of the time. It is the same as if, when a man is riding a bicycle and using only one foot, he should push down once and then wait until the pedal went all the way around and came up the second time before he pushed again.

In the two-cylinder engine the cylinders are timed so that their power strokes alternate, and thus, while each one is giving power one-fifth of the time, the two together make a total of power two-fifths of the time. The same is true with the four-cylinder. A great many people think that in a four-

cylinder car the power is applied all the time, but as a matter of actual practice, it is necessary to release the power as the piston approaches the dead center of each stroke. The exhaust valve opens when the piston is four-fifths of the way down. The exhaust instantly rushes out and of course during the last fifth of the stroke no push is being exerted on the piston.

In the six the idle pauses of the other types have completely disappeared along with the dead center. The power strokes of the six not only meet, but they overlap each other. Before the first cylinder has stopped delivering power, in fact when the piston is but two-thirds of the way down, the second cylinder begins, and so on. This means that even when the engine is running very slowly, the power is absolutely continuous, and that during three periods in each revolution two cylinders are working at the same time.

WHY THE SIX RUNS MUCH MORE SLOWLY ON HIGH-GEAR THAN THE FOUR.

In the first place, the four has to depend on the flywheel to store up enough power from each explosion to keep the car going smoothly and "carry the engine over" from one stroke to the next. But a flywheel stores up practically no power when moving at slow speed, and the slower the engine is throttled down, the longer the idle pauses become between strokes. It becomes nip and tuck whether the engine will keep going or quit. There is so little surplus power that if one cylinder happens to get a poor charge of gas, the engine simply stops.

But in the six, as we have seen, the power is applied all the time. The engine does not have to jerk itself back to life twice each revolution like the four, and therefore the six can throttle down to a speed entirely impossible to the four. What is impossible or difficult in the four seems only natural in the six. This point and the following one are essential and important differences between the four and the six.

WHY THE SIX ACCELERATES SO MUCH FASTER THAN THE HIGH-POWER FOUR.

Suppose the big four is running along as slowly as it can, with conditions about as outlined in the last section. Maybe a wagon is in front of the car. The driver sees an opening and wants to make for it quickly. He opens the throttle and lets in a larger charge of gas, but the engine, instead of promptly responding with increased speed, hesitates for a moment, as if it were undecided whether to pick up the load or not. And

if he throws the throttle too wide, the engine chokes and stops altogether.

The reason is simple.

Since the slow-moving flywheel stores up but little more power from each explosion than is needed to keep the car moving and compress the next small charge, it happens that if a much greater quantity of gas is suddenly admitted into the cylinder, the flywheel is unable to compress it, and the elastic force of the gas, springing the piston backward, stops the engine. In the six-cylinder engine all is different, because when the cylinder under compression has its piston but two-thirds of the way up, the preceding cylinder gets its explosion, and this new force at once takes the burden from the flywheel. It is impossible to let a charge of gas in the six when there is no power to compress it. The result is that the six "follows the throttle" up or down instantly.

But even aside from its continuous torque, the six would accelerate much more rapidly than a four of the same horsepower, because the engine of the six delivers the impulses 50 per cent faster, and obviously the lighter flywheel of the six can be speeded up more quickly than the heavy one of the four.

All these things combine to make the six accelerate much faster than the four, which is sometimes of the greatest importance.

WHY THE SIX CRANKS MORE EASILY THAN THE HIGH-POWER FOUR.

Cranking is like giving the grindstone the start by the hand. But in a motor it is necessary to do more than turn the flywheel. One must turn the crank until he draws a charge of gas into the first cylinder, and then keep on turning until he compresses the gas and reaches the igniting spark.

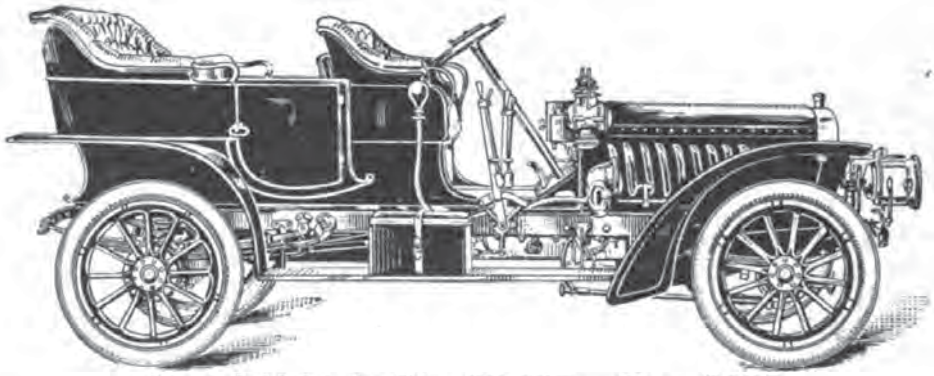
Certainly it is easier to turn the light flywheel of the six than that of the four. And since the six divides the total volume of gas into six charges instead of four, the effort needed to compress each charge is one-third less. Naturally the work of starting the engine is easier than in the four. Even with somewhat greater friction, the net result would be decidedly in favor of the six.

WHY THE SIX RUNS MORE SMOOTHLY THAN THE HIGH-POWER FOUR.

There are two reasons why the six runs more smoothly and has less vibration than the four: (1) The continuous torque of the six-cylinder engine; (2) its perfect balance,

Stevens-Duryea Sixes

Mean the Fullest Enjoyment of the Motor Car...



Model U Light Six, $3,500. Top, $150.

THE wise automobile buyer will purchase a six-cylinder car if he desires a horsepower of 40 or over pays more than $2,750. The six-cylinder car has so thoroughly demonstrated its great superiority over the high powered four that the latter type of car is being built by fewer manufacturers each succeeding year.

Six-cylinders are absolutely necessary if you are to derive the maximum amount of pleasure in motoring.

It is obvious, however, that but few manufacturers are experienced builders of sixes, inasmuch as the majority of manufacturers held back until they were **forced to build sixes.** The Stevens-Duryea Company were the six-cylinder pioneers of America. The design of the Stevens-Duryea Big Six, which scored an instant and unqualified success, was being worked out a year before the first car was built in 1905. Hundreds of Stevens-Duryea Sixes were **in use and giving satisfaction** when manufacturers generally were **starting** to build sixes.

The famous Stevens-Duryea Unit Power plant and Three Point Support insure perfect alignment always, lighter weight and extreme simplicity and durability. Its six-cylinders mean perfect control, quiet running and absence of vibration.

Don't purchase an experiment simply because it is a six-cylinder car. Select a car that is a known quantity. Stevens-Duryea Sixes have been a known quantity since 1905.

THE FELKER AUTO. CO.

1535 TREMONT STREET G. A. MAXWELL, Manager

Manufactured by Stevens-Duryea Company, Chicopee Falls, Mass.

which is a mechanical impossibility with less than six cylinders.

An explanation of just what mechanical balance is would be both long and technical. For our purpose, it is sufficient to show the effects where mechanisms are or are not balanced.

Refer to the grindstone once more. As a boy, did you ever try to see how fast you could make it run and then take your foot off the pedal and watch it? You remember how it would jerk and shake and almost tip over? This was due to lack of balance. Ask a railroad engineer, and he will tell you that the steam locomotive is not balanced, and that the heavy pounding which follows causes a large per cent of the locomotive breakdowns that occur through bolts or nuts being shaken loose and parts being broken through crystallization. This pounding is also a cause of broken rails. But broken rails are rare on high-speed electric roads, and the wear and tear on the track are less than on steam roads, because the electric motor is in perfect balance. That is one reason why the Eastern railroads are electrifying their systems.

Naturally the one-cylinder automobile engine is the farthest from perfect balance, as everyone knows who has driven one at its highest speed. The two and four are proportionately better, but even the four is not perfectly balanced. The finest of them has a zone in its speed range at which it will vibrate in a very unmistakable manner; the lamps, fenders, dashboard, steering column, and control of levers will indicate when this zone is reached by responding to the vibration. If the car is placed on a wooden floor, the vibration will be vigorous enough to be fully appreciated by anyone standing near. But if the same test is applied to the six, the difference will be found most striking.

It is a mechanical fact that a motor of six cylinders (or a multiple of six) having the impulses timed 120 degrees apart, is in mathematical balance, and it is the only type which can be perfectly balanced.

WHAT THE DOCTORS SAY ABOUT THE AUTOMOBILE.

The publishers of The Times and Journal have made diligent inquiry among its subscribers as to the users of automobiles and as to the efficiency of the various types of cars in their practice. The response was generous, and we might say, in some instances, enthusiastic.

We quote one or two replies and simply summarize some of the others for lack of space, this automobile number having developed far beyond our expectations.

Denver Medical Times, Denver, Colo.

Gentlemen: Replying to yours of March 9, 1908, will say that this is the third year that I have used the automobile in my practice. In 1906 I purchased a "Reo" light touring car, with an extra runabout back that I can use in place of the tonneau. Am still using this car and it is running better than when I bought it. Do not know of any car costing the same money that can climb steeper hills or go through deeper mud. A physician must have a car that will "keep going" and the reputation here for the "Reo" is that it always goes. Yours sincerely,

AUGUSTUS C. BEHLE.

Denver users:
Dr. Robert Levy
Dr. James Rae Arneill.
Dr. H. W. Rover.
Dr. J. B. Kinley.
Dr. J. M. Foster.
Dr. Frank A. Greedy.
Dr. Leonard Freeman.
Dr. C. K. Fleming.
Dr. G. M. Blickensderfer.
Dr. Morris J. Krohn.
Dr. Horace S. Cooper.
Dr. John Galen Locke.
Dr. W. B. Craig.
Dr. J. D. Gibson.
Dr. B. F. Stockwell.
Dr. Howell T. Pershing.
Dr. J. N. Hall.
Dr. G. M. Edwards.
Dr. J. E. Kinney.
Dr. John Elsner.
Dr. G. Walter Holden.
Dr. H. G. Wetherill.

Salt Lake City, Utah:
Dr. E. W. Whitney.
Dr. W. Benjamin.
Dr. W. S. Ellenbeck.
Dr. E. S. Wright.
Dr. E. Viko.
Dr. Harry N. Mayo.
Dr. Harry D. Niles.

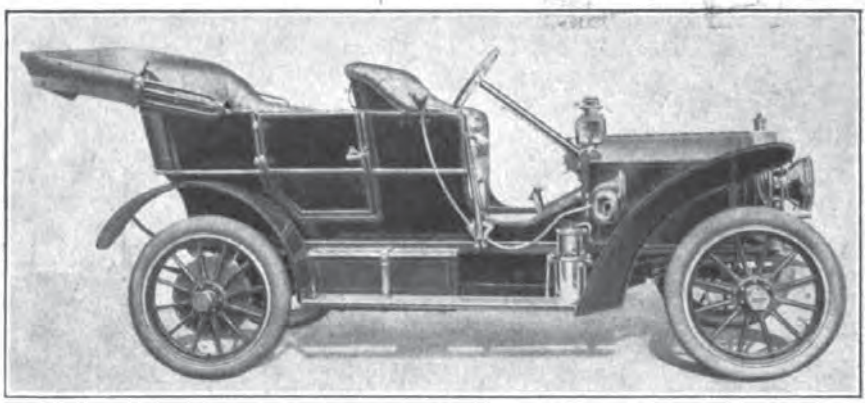
Colorado—Canon City, Dr. James G. Maxwell; Colorado Springs, Dr. J. F. McConnell; Boulder, Dr. W. P. Harlow, Dr. O. M. Gilbert; Trinidad, Dr. E. W. Fox; La Junta, Dr. W. M. Moore; Greeley, Dr. R. T. Graham; Fort Collins, Dr. W. A. Kirkland.

Automobile Supplies.—One of the most interesting stores for the user of an automobile to visit is the store of the Denver Auto Goods Co., 1614 Broadway, Denver, Colo.

Here will be found a most bewildering display of supplies for the automobile. Said to be the most complete of any similar store this side of Chicago.

This concern has a trade which reaches east to and all through Nebraska, south into New Mexico and Arizona, and north into Wyoming and Utah.

FOUR-CYLINDER 40 H. P., PRICE $2,650.00

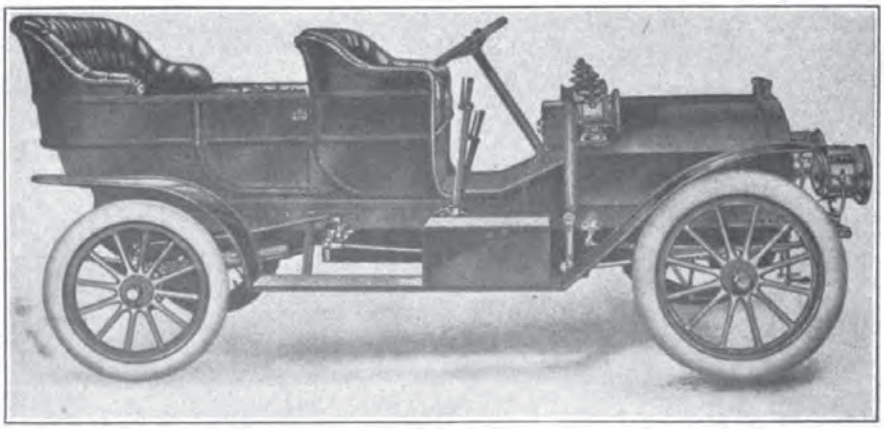


THE GREAT SMITH CAR

In either Touring or Road models offer exceptional value. Light in weight, graceful in outline, beautiful in finish, and powerful enough to take the steepest grade or the sandiest road with ease and speed.

For simplicity of control, easy riding qualities and endurance, the GREAT SMITH car cannot be excelled. We earnestly solicit the opportunity to demonstrate the many excellent features of this car and our services are at your disposal whenever convenient for you without cost or obligation. We believe in the car we are selling, and "It's easy to demonstrate the truth." Do not take our word but ask the man who owns a GREAT SMITH.

Roadster, Touring Car or Runabout, 40 H. P. 4 or 6-Cylinder, $2,500.00
Seven Passenger Touring Car, $3,500.00 **Limousine, $4,500.00**



THE CARTER TWO-ENGINE CAR

Two separate independent engines that may be operated singly or in unison at the will of the driver. Each with its own ignition system, carburetor, lubricator and clutch. The failure of one engine does not mean a "TOW" home; the second will do the work easy and surely. **"If you start in a CARTER Two-Engine you'll get there."**

THE DENVER MOTOR CAR COMPANY

1618-1620 Court Place, Denver **Telephone Main 2689**

They have a large and growing mail and express trade, being able to fill orders for all parts of the West, the same day the order is received. This is a great convenience to anyone using an automobile.

The business is carried on by bright and enterprising young men, who are thoroughly posted in this line, and they are supplied with ample capital to carry on the business in a large and successful way. They invariably have all new goods tested before placing them on sale, and in this way are able to sort out and select such goods as they know can be depended on, thus insuring their customers full value for their money.

Wood, Erickson & Trimble Auto Co.—"The Business Man's Runabout," "The Doctor's Machine" and "The Motor Surrey," made by the A. B. C. Motor Vehicle Manufacturing Co. of St. Louis, are machines which are rapidly growing in favor. The machines are high grade in every particular, and most reasonable in price. This line is handled in this city by The Wood, Erickson & Trimble Auto Co., 1808 Arapahoe street. This firm also has the Denver agency for the "Mason," the swiftest, best and strongest two-cylinder car in America. It is popularly known as the "hill climber." The name "Mason" is synonymous for all that is good and reliable. The auto buyer will conserve his interests by thoroughly testing the machines handled by this firm.

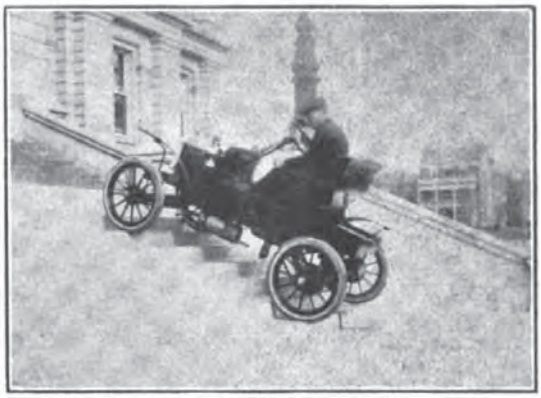
The Great Arrow and the Pope-Hartford.—The manufacturer says: "We have endeavored to adapt our policy to that of the intelligent user and take a lesson from his point of view. We believe in building a car to be the servant and not the master, ready at all times to do the owner's bidding; to minimize repairs and accidents; to be good and true for a long series of years; to be also a thing of beauty, of joy and pride of ownership. To those who appreciate our view we appeal according to their various wants. Our continuous endurance records, our policy as outlined, our many enthusiastic owners, all go to prove our oft-repeated claim, which we again assert, that The Great Arrow Motor Car is, for American roads, conditions and temperaments, without a rival." Tom Botherill, 1643 California, is agent for this machine, which enjoys an international reputation. He also has the Pope-Hartford Model M., admittedly and unquestionably the speediest, most powerful, most popular and highly endorsed car in its class of the year.

The Robertson & Doll Carriage Co., who have been established in Denver for the past 26 years and gained a reputation for good work, prompt service and reliability, do all kinds of automobile work, such as repairing and new springs made, repairing the wheels and axles, repairing the bodies and painting in all its branches. When they repaint a car it seems to show better than when it was new, and has lasting qualities, because they use only the best paints and varnishes. They repair and do new trimming to bodies and make new tops to autos. They also make wind shields with plate glass used folding or straight up.

"Apache" Motor Cycle.—Single cylinder, 3 horse power, Thor engine and Thor carburetor, absolutely the very best made, double grip control, interval gears, the best system of lubrication, the Thor coaster brake, 2½ inch G. & T. steel rim tires, Person's saddle. Frame, 22 inches high, 1⅛ inch 16 gauge seamless steel tubing, double bar construction with engine swung in loop and sitting upright, and 5½ inches lower than on the 1907

"Apache," causing the machine to ride and control much easier, and doing away with the top-heavy effect on the 1907 "Thor" sets, and doing away with 80 per cent of the 1907 vibration. Forks, very heavy and strong, with heavy 4 plate crown. The "Thor" spring forks furnished (at extra cost) but not recommended, as spring forks (of any make) add to trouble and are not needed where the "Apache" Style Frame and 2 inch tires are used. Speed, 5 to 50 miles per hour. Brown & Beck, Makers, Denver, Colo.

The Brush Runabout was designed in Detroit by Alanson P. Brush, designer of the single cylinder Cadillac, of which about 1,600 have been sold. The car for the busy physician. It keeps running, costs less than a horse and requires no more care if that care is given regularly; works



Brush Runabout.

24 hours a day without getting tired, eats only when it works, averages 25 to 35 miles on a gallon of gasoline, climbs any hill with a road on it, and goes safely anywhere that wheels will go.

It will not run very fast—up to 25 miles per hour—and seats only two persons comfortably. By observing these limits and not trying to make a combination of runabout, touring car and racer, all in one, Mr. Brush has produced a car of extraordinary efficiency, reliability and economy.

The persistent sale for five years of his single cylinder Cadillac, and the marvelous success so far of his Brush Runabout are the best arguments of its merits. The detailed reasons why are in our catalogue. Write for it today, to F. A. Trinkle, 1376 Broadway, Denver, Colo., who has the western agency.

Denver Motor Car Co.—Among the many types and models of motor cars on the market today, two cars in particular occupy an eminent position attained by reason of their beautiful lines and finish, their endurance and great power, their simplicity and positiveness of control. These are the Great Smith cars made by the Smith Motor Car Company of Topeka, Kansas, and the celebrated Carter two-engine car, built by the Carter Motor Car Corporation of Detroit, Michigan.

The Great Smith cars have many features that have won for them the enthusiastic admiration of the motoring public, chief among which might be mentioned their neat, compact appearance, easy and positive steering qualities, lightness of weight, simplicity of the controlling mechanism and the power and endurance of their engines.

THE REPUBLIC CLINCHER TYPE

REPUBLIC TIRES

For Long Wear, Dependability and Satisfaction

UNEQUALED

Buy Republic Tires and then Forget Tires

HENDRIE & STEPHENS

DISTRIBUTERS FOR COLORADO, UTAH
WYOMING, NEW MEXICO, TEXAS AND ARIZONA

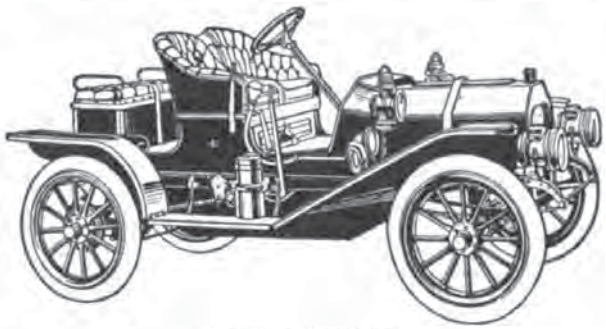
1721 Stout Street (Opposite Albany Hotel) Denver, Colorado

We Will Exhibit at Denver Auto Show, April 6, 7, 8

The Carter two-engine car is precisely what its name implies; a car operated by two separate and distinct engines; each engine being two, four or six cylinder, air or water cooled as desired. Two such units are placed opposite each other and may be operated singly or in unison at the will of the operator, according to the speed desired or the condition of the roads. Each engine has its own ignition system, carburetor, lubricator and clutch mechanism and when one engine is running the driver does not have to leave his seat to start the second, a small foot lever throws in the clutch and the car instantly responds to the increased driving power.

The Reo Car.—There are several classes of business men who are becoming rapidly converted to the automobile as a safe, speedy, dependable and comfortable mode of conveyance. Among these we are safe in saying the physician is the most prominent.

By the employment of an automobile physicians very frequently have been able to double and treble their practice. To the physician time is a paramount consideration. A few moments to him frequently means the making or marring of some important appointment.



The Reo Roadster

The 1908 Reo 18-20 horse-power, 2-cylinder Model "C" roadster is a striking example of go and power, and a car that meets every emergency. It is a handsome, shapely, attractive looking roadster. It is simple and substantially built, and backed by its powerful engine, gives the speed and efficiency of cars costing double its price. The engine is built under the body, thereby distributing the weight evenly, insuring comfort and making it an exceptionally easy rider. It is superbly finished and trimmed, while its upholstery and appointments are of the highest grade and most modern pattern. The car is regularly equipped with trunk box, which is convertible into an emergency seat for two extra passengers, lamps, tires and tools; and has a speed of forty-five miles an hour. Reo Automobile Co., 1634 Broadway.

The Buick and What H. H. Martin, M. D., says: I have been using the Model "F" Buick for over four months past in my practice, and must say it has given satisfaction in every respect. I have had no annoyance whatever. During this entire time I have not been detained one minute from my business on account of the machine being out of commission. I feel that the nice manner in which you take care of your customers in the way of instruction, together with superior quality of material and perfected mechanism accounts for this.

I have no hesitancy in recommending this machine to the public as the greatest for the money.

Dr. E. Sirois says: It affords me great pleasure to be able to recommend the Model "G" Buick, which I have owned and been operating since June of last year. I have made several trips into the state and have never yet been disappointed in the performance of the car, either as to speed or relibility. It makes an ideal physician's car, and I shall recommend it to anyone needing an automobile, as being thoroughly dependable in every way."

Dr. Martin in his Buick Car.

Dr. Sirois in his Buick Runabout.

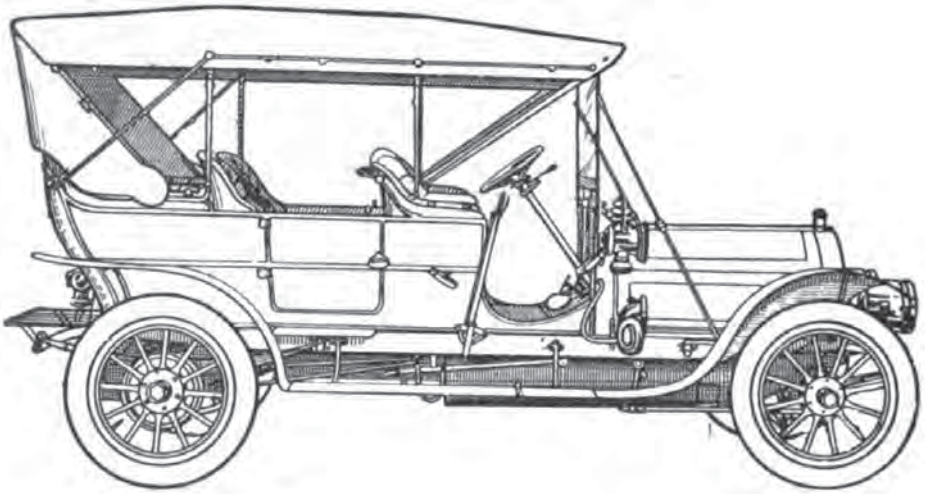
The Buick Motor Company has grown from a small factory turning out 34 cars in 1904 to a plant with 16 acres under roof in 1908, and are making this year 9,500 motor cars of the various models. To have made such rapid growth is in itself sufficient assurance that the workmanship and material are of the best. Another strong point is the increased sales shown from year to year in the same locality.

When Mr. McFarland visited the factory in March the Buick plant was turning out 35 cars a day and were sold ahead of production. Truly this is a wonderful record.

The MacFarland-Powell Auto Co. are the agents for the Buick.

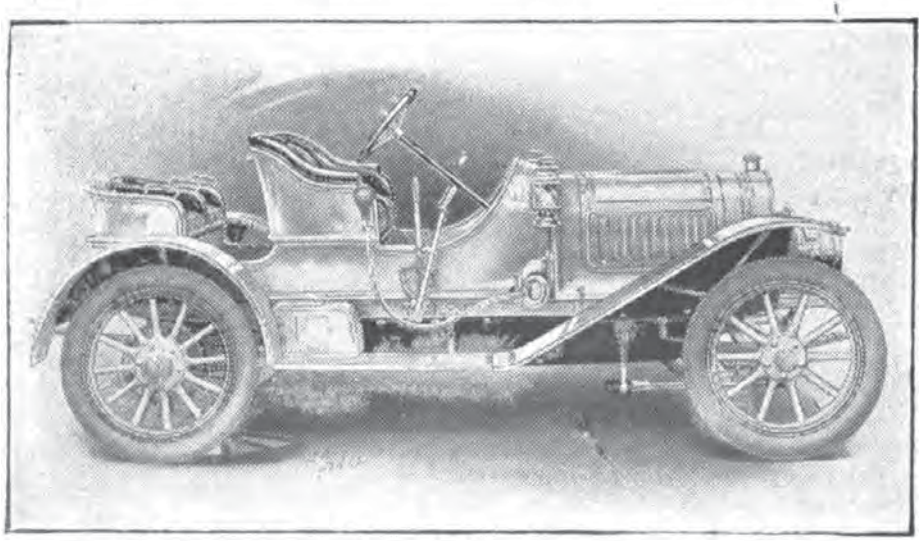
Republic Tires.—Appreciating the fact that there was a general demand for a tire of higher class construction and one of more dependable character than the average tire in use, the Republic Rubber Company of Youngstown, Ohio, for many years enjoying the highest reputation in the manufacture of rubber goods, took up the manufacture of automobile tires. In entering this new field of endeavor, they first made an exhaustive study of the conditions, and this, combined with the experience of years in rubber manufacture, and the inventive genius of their experts, resulted in Republic Tires being recognized, from the outset, as being worthy of special consideration and the confidence of the motoring public.

That this confidence was not misplaced is evidenced by the fact that in order to meet the demand for Republic Tires, this Company has, in the past two years, been compelled to erect two large additions, in the shape of new buildings, to their already enormous factories covering many acres of ground. Notwithstanding these additions, it was impossible to fill the steadily increasing orders, and it was only but recently, by the erection of a new six-story building covering a large area, that their output in tires



The Great Arrow Six-Cylinder

A large motar car is a pleasure vehicle, and the more comfortable we can make it, the more nearly it becomes the ideal pleasure vehicle, and comfort, luxury, the sensation of gliding rather than being propelled by machinery, are the results attained in the Six-Cylinder **Great Arrow**



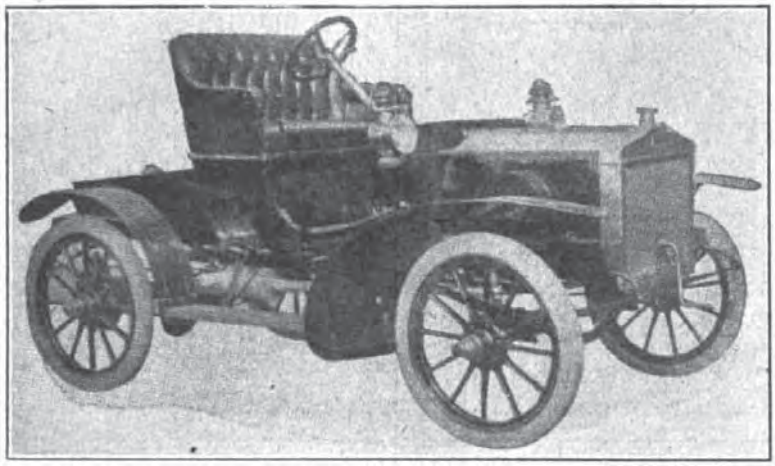
The Pope-Hartford Runabout, $2,750

Absolutely the best car in its class, and equal
to any 40 h. p. car for power and speed

TOM BOTTERILL 1643 California Street
Denver ... Colorado

was increased enough to allow of supplying some sections which heretofore were neglected. Denver and its tributary territory was one of the first to benefit by this increased output, and Hendrie & Stephens of this city, located at 1721 Stout street, who are general agents of the Republic Rubber Company, now have, for the first time, a complete stock of Republic Tires

Aurora Car.—The attention of physicians is called to the Aurora Car, which is especially designed and built for the doctor's use, either in city or country practice. The car possesses several new and attractive features. It is chainless; has a high road clearance, platform rear springs,



The Aurora Runabout.

and 32-inch wheels. Seats are also provided for four extra people. The machine develops full 20 horse power. The price is only $775.00 for this most excellent machine. Intending purchasers should look at the "Aurora" before buying. Mr. A. T. Wilson, 1558 Broadway, Denver, is the general agent for Colorado and Wyoming.

Tailor-Made Automobile.—It has been left to Chas. A. Scott of 1560 Clarkson, to inaugurate the exceedingly practical proposition of building to order an automobile known as the "Denver."

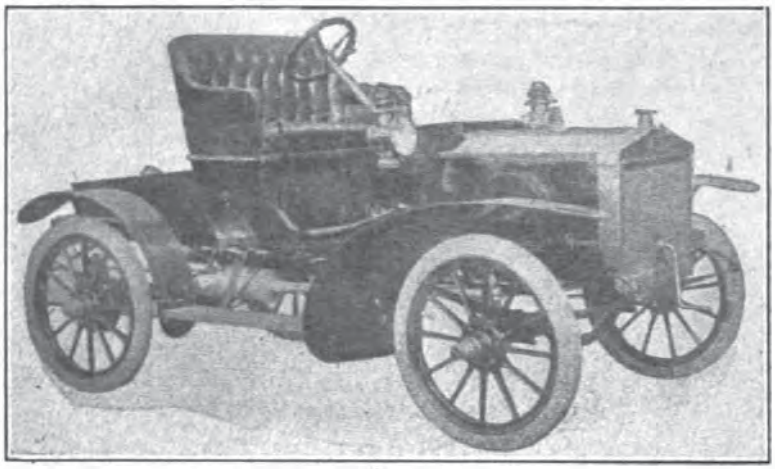
You may want a detachable tonneau or runabout body; a water-cooled or air-cooled motor; small horse power for economy, or a high horse power for speed; a low or high gear or any combination. He is prepared to put up the car as desired and give you the best materials and workmanship.

Mr. Scott also invites your attention to his specially equipped repair shop, no one doing better work than he, because he has only the best men. Mr. Scott says that he believes the secret of repairing an automobile is in diagnosing the trouble.

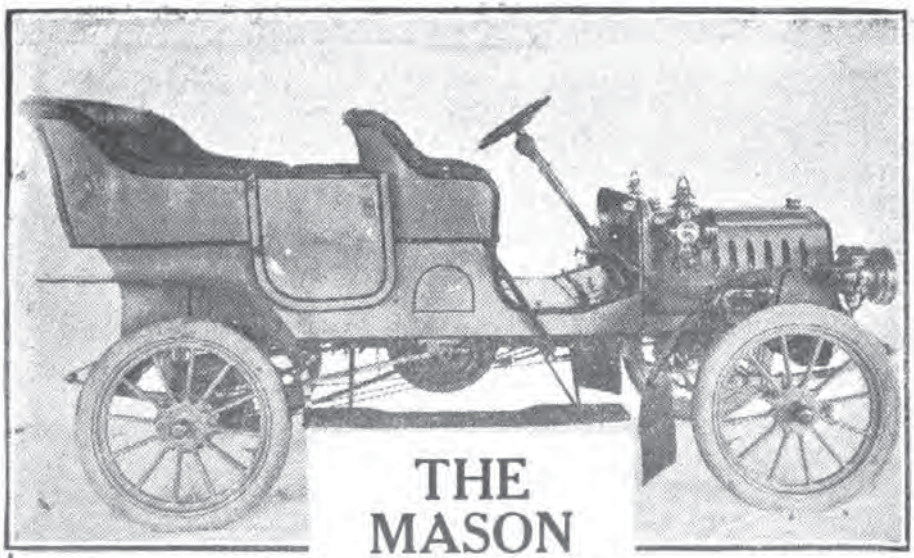
G. H. Stover, M. D., says: My first car was one of the early steam type, now happily obsolete. The next was a Pope Waverly electric of thirty cells. It gave good service for two years; then we put in a new set of batteries and it is as good as new. It is an enclosed car, and my wife uses it during the day; at night, particularly during winter or cold or rainy weather, it is the ideal means of locomotion.

AURORA CAR, $775.00

Chainless, High Road Clearance, 32-inch Wheels, Easy Riding
Platform, Rear Springs, Twenty Horse Power, Seats Extra Four People



A. T. WILSON Agent Colorado and Wyoming **1558 Broadway**



THE MASON

The "Mason" made with Four Style Bodies, 24 and 28 H. P. Speed 40 Miles per Hour. Price Touring Car, $1,350. Runabout, $1,250.

The Wood, Erickson & Trimble Automobile Co.
1808 ARAPAHOE STREET DENVER, COLORADO

A. B. C. Auto Buggy

12 H. P., Friction Drive,
Body Made in Three Styles,
Speed 25 Miles per Hour
Price, $600, $650 and $700

1808 ARAPAHOE STREET

Then I got a Maxwell runabout, two cylinders, and used it a year with the greatest possible satisfaction; it was always ready to go, never laid down on me, and the cost of operating it was ridiculously small. As this was only a two-passenger car, and as I intend to do a good deal of touring in future, I turned it in and got a Stevens-Duryea light six-cylinder car, not a heavy car, very flexible of control, suitable for country roads or city streets, quiet running and very powerful, and my joy is now complete.

The Rambler Models for 1908, made by Thomas B. Jeffery & Co., Kenosha, Wis., possess many new and desirable features. A cut of Model 34 Touring Car apears in this article. The frame is of pressed steel throughout. The wheels are 36 inches in diameter with 4-inch tires. The crank

The Mitchell.

The Rambler.

case is a distinctly new pattern, the body of the case being in one piece, access to the bearings being through a plate covering the entire right-hand side of the case. A leading feature of the motor is the method of support. The price of this model is $2,250.00, and is for sale by E. R. Crumbe, 1541 Cleveland Place, Denver, Colo.

The Mitchell Model H. Runabout, manufactured by the Mitchell Motor Car Co. of Racine, Wis., is a car particularly adapted to the doctor's use. Its engines develop a full 20 horse power. Tires are 32x3½ inches, ball bearings in front, Hyatt roller bearings in rear, with 92-inch wheel base. The design and equipment of this machine are of the very best, and the price only $1,000.00. Mr. E. R. Cumbe, 1541 Cleveland Place, Denver, is the general agnt for this territory and will gladly give a demonstration at any time.

Electric Garage.—The Electric Garage Company, located at 921-927 East Fourteenth avenue, of which L. B. Brown and L. G. Sterrett are proprietors, is one of the newest and most successful of Denver's motoring institutions. Their new garage, which is the largest in the city, used exclusively for electrics, having 50 by 110 feet of clear floor space for the storing of cars. The repairing plant is perfectly equipped in every department. An elevator which will give access to the second floor and increase their present capacity greatly is now being installed. The Electric Garage Company does a general garage business; it is equally interested in all electrical vehicles and does not favor any one particular make. Its business is exclusively electrical, no gasoline or steam machines are kept. A specialty is made of overhauling, buying, selling, and rebuilding electrical vehicles in addition to the regular garage service. This company has adopted a number of policies that are new in Denver motoring institutions and which are original, such as having cars in its care covered by in-

If you own an

Automobile

you will need supplies from time to time

The Denver Auto Goods Company

carries the most complete line of Automobile Supplies in the West

We pay particular attention to mail and telegraph orders. Sometimes if you don't know exactly what you need give us an idea and we can put you right. Our store is in charge of men (not boys) who know their business. We keep only such goods as we know to be the best. Our prices are reasonable. You have to buy supplies every year. therefore, we have to treat you well to hold your trade.

We repair tires and we sell the best tire made, "The Empire;" they wear longest. We sell the best Oils and Greases that are in the market. Send for some of our Repair Gum and fill those cuts in your tires. Get one of our Filters which removes water and all impurities from gasoline.

Denver Auto Goods Company 1614 BROADWAY DENVER, COLORADO

Think it over

when in need of anything in our line. ¶ We have the only Garage whose employes devotes their entire time to the caring of cars. ¶We have a special rate on gasoline and oils of which we handle the best. Our competent workmen assure us of our guarantee of satisfaction. ¶Talk it over with our manager

Denver Automobile Co. 1530 Clarkson Phone York 2210

L. C. LIEBER, General Manager E. E. HIGHMAN, Secretary and Treasurer

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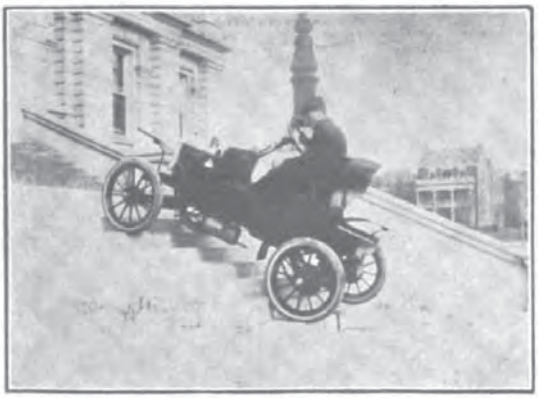


BRUSH Runabout

More people want, **and have the money to buy,** the Brush Runabout than any other car in America.

A Prediction: Inside of a year, the single cylinder vertical will be as great a craze in this country as it is now in France and Europe.

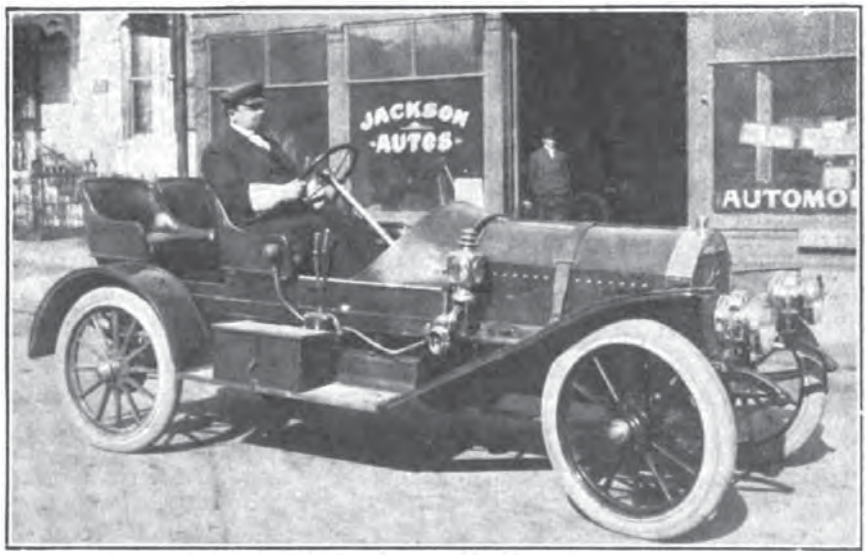
The Brush is the first of the new style singles. Common sense always wins.

F. A. TRINKLE, Western Agent

1376 BROADWAY DENVER, COLORADO

surance and supplying customers with cars, batteries and tires while their electrics are being repaired. Mr. Sterrett, who is the general manager and practically at the head of the institution, has had twenty years of experience in some of the best-known manufacturing establishment in the United States and has associated with him at the present time some of the most able electrical workers in the city of Denver.

The Jackson has been made for the past eight years at Jackson, Mich., but has only been on the western market since 1906. The Jackson, on its introduction here, at once attracted attention by the noiseless operation of its working parts and is known by many of its friends as the silent car. The first three years the company confined themselves to two cylinder



Dr. John Galen Locke in his Jackson Roadster.

cars, but in 1906 and since they have been making four-cylinders, and in early spring will have out a six-cylinder. The car that especially appeals to the professional man is the Model F Runabout two-cylinder, 16-18 horse power, shaft drive, 90-inch base. This car travels 20 miles on a gallon of gasoline, has a seating capacity for three adults. Price, with equipment, horn, lamps, etc., is $850 f. o. b. Lansing. The western end of the selling of Jacksons is in charge of Mr. Hannan, 1441 Welton St., Denver.

The 1908 Automobile Show will be held at the Mammoth Roller Skating Rink during the 6th, 7th, 8th, of April