

MILE RECORD DOWN TO :48 $\frac{3}{5}$

Webb Jay in White Steamer Cuts Loose at Morris Park Both in Competition and Time Trials—Thomas Cup Goes to Chicago—Chevrolet and Christie Out of the Running

Morris Park, N. J., July 3—Special telegram—America came back into her own sphere today in the track racing game, which she originated and made her national boom of automobile speed competition. Twice was the Italian speed creation, which has held the track premiership since the season opened, beaten by an American-made steam flyer, and besides its deservedly boasted mile track record of 52 $\frac{1}{2}$ seconds was officially tied once by an American-made gasoline machine. That was not all, for the Yankee steamer was timed nearly 2 seconds faster than the existing record in an intermediate mile. In very truth it is a long lane which has no turning, and today the season's champion reached the parting of the ways.

At the first day's racing of the American Automobile Association's championship meet, Major Miller's Fiat was beaten for both the heavyweight championship and the Diamond cup by Webb Jay with the now thoroughly turned-up White steamer. In the first mile of the former contest the White was timed by Bob Stoll, the veteran athletic watch holder, in 49 $\frac{3}{4}$ seconds. It being an intermediate mile, however, it will not be allowed as a record. It seems as though Jay now had the mile figures at his mercy for the trying. In a mile go against the watch Walter Christie, driving for the first time his new 120-horsepower double engine direct-drive Christie car, tied the Chevrolet Fiat record of 52 $\frac{1}{2}$ seconds and shut off before reaching the tape at that. The day's results brought to the front two new rivals for the American championship—the Christie and the White. Chevrolet had no excuse to offer for the Fiat and said it was fairly outpaced.

If today's running gives a correct time on the racers it would seem that the fight from now on lies between the two Yankee-built cars. The pair met in the first heat of the contest between the Chicago Automobile Club and the Automobile Club of America for the Thomas cup. The New Yorker got three lengths the better of the start, held his own, and led by a furlong the first lap in 1:17—Jay, 1:25. In the second lap Christie's right front tire gave way and forced him to stop. This gave the heat to Jay and probably the cup to Chicago, for the White is expected on the strength of its performance today to again defeat the Fiat. It has been agreed that Chicago, being represented by a single car, should ride a heat against each of the New Yorkers. It cannot be denied that Christie's car made a deep impression, but that last mile of the White sets one to thinking a bit.

The meet was marked and marred by a series of accidents to machines and men, which put two of the crack flyers out of commission and sent a spectator to the hospital. During preliminary practice the Reo Bird punctured, dashed through the fence and over the bank at the club house, turned and was badly wrecked. Wurgis jumped and escaped unhurt. The heavyweight championship contest brought calamity again to Paul Sartori and Alfred Vanderbilt's unlucky 90-horsepower Fiat. In rounding the far turn

Sartori, blinded by the dust, dashed into that outer fence, carrying away an iron pipe used as a railing and wrecking his car, but not beyond repair. The pipe struck a 16-year-old boy, who was some distance from the fence, and broke both his ankles. Sartori was not hurt. On the last lap of the same race Roberts, who was driving the big Thomas Flyer, struck the fence and put his tire out of commission. At the club house turn the wheel gave way. Roberts kept control, but fainted after he had brought the machine to a standstill. Rumors that he had been badly hurt flew thick and fast, but later he reassured the spectators by driving the car sagging on its rear hub by the grandstand.

If this was not enough of accidents for 1 day, two touring cars came into collision outside the grounds, throwing out three women, one of whom had to be taken to the hospital.

Roberts and Sartori were beaten from the jump in the heavyweight championship, which was fought out by Jay and Chevrolet. The White led by 150 yards the first lap in 1:17 $\frac{1}{2}$; by a furlong the second in 2:32 $\frac{1}{2}$; by 400 yards the third in 3:46, and by $\frac{1}{4}$ mile at the fourth, which was the end, in 5:01, the Fiat following in 5:20. The contest for the Diamond cup was practically a repetition of the former race. Jay gained an average of 80 yards each lap and won by 300 yards in 5:06 $\frac{1}{2}$, to Chevrolet's 5:18 $\frac{1}{2}$. The summary:

Novice handicap, one lap, 1.39 miles—E. Parker, 24-horsepower Fiat, scratch, first; E. H. Moses, 7-horsepower Stevens-Duryea, 45 seconds, second; time, 1:38 3-5.

Heavyweight championship, four laps, 5.56 miles—Webb Jay, 15-20-horsepower White, first; Louis Chevrolet, 90-horsepower Fiat, second; time, 5:01.

Tourist novelty race, three laps, 4.18 miles, unladen and reload alternate laps—W. W. Snow, 12-horsepower Decauville, first; D. D. Holmes, 16-horsepower Wayne, finished first but was disqualified for not coming to a full stop. Holmes' time, 8:45.

Thomas trophy, four laps, 5.56 miles—First heat—Webb Jay, 15-20-horsepower White, for Chicago Automobile Club, first in 5:55 4-5; Walter Christie, 120-horsepower Christie, for Automobile Club of America, punctured and stopped in second mile.

Unlimited pursuit—Guy Vaughn, 40-horsepower Decauville, first; Eddie Bald, 35-40-horsepower Columbia, second. Caught in three and one-half laps. Time, 5:21.

Diamond cup, four laps, 5.56 miles—Webb Jay, 15-20-horsepower White, first; time, 5:06 4-5; Louis Chevrolet, 90-horsepower Fiat, second; time, 5:18 1-5.

Bronx handicap, four laps, 5.56 miles—Final heat—A. Comancho, 10-horsepower Franklin, scratch, first; E. H. Moses, 7-horsepower Stevens-Duryea, 3 minutes, second; time, 10:22 2-5; W. W. Snow, 12-horsepower Decauville, 5 seconds, third; time, 7:11 4-5.

One mile record trial—Walter Christie, 120-horsepower Christie; time, :52 1-5, equaling former record.

RECORDS GO SECOND DAY

Morris Park, N. J., July 4—Special telegram—Chicago wins the Thomas cup. Webb Jay did the trick with his White steamer technically; he had a walkover today, for Major Miller's Fiat broke its shaft in practice before the races. Jay, with rare good nature and sportsmanship, consented to permit Walter Christie, whose car had lost yesterday

through a puncture, to take Louis Chevrolet's place. After covering the second heat handily the Christie flyer had to slow down in the third round, when in a lead of a hundred yards owing to the clutch having burned out. Jay got away in the lead, but was passed by Christie on the backstretch. When the latter slowed down Jay shot by and won by 70 yards.

A far more satisfactory performance for Jay, however, was his sensational run for the mile record, which netted the White 48 $\frac{3}{5}$ seconds, putting to blush the :51 $\frac{1}{2}$ of Christie and Chevrolet. The Fiat and White leave for St. Paul tonight. Christie will remain behind, it having been arranged that he should go only in the event of the Fiat remaining behind.

After one false start Christie got away a couple of lengths to the good in the second heat of the Chicago-New York match, which was run at four laps—5.56 miles. Covering the first circuit in 1:16, Christie led by 150 yards. This he increased to 350 yards the second round, running the mile in 50 $\frac{1}{2}$ seconds. A lap from home the New Yorker led by a quarter of a mile, but dropped back the last round owing to a punctured front tire.

The veteran Decauville, so long an easy winner among the middleweights, went down to defeat before Hollander & Tangeman's new 24-horsepower Fiat track racer in the championship at this class. E. Parker, who piloted it, gained 40 yards a lap on Vaughn and won by half a furlong. The Motor Age man, a bicycle handicapper, tried his hand at giving the allotments for a handicap at three laps and succeeded in getting all seven starters on the home stretch at the finish.

The Decauville and Fiat middleweights had a mile record-breaking duel when the trials were reached. First Vaughn lowered Bernin's :59 at the Empire track to :58 $\frac{1}{2}$. It stood on the books for less than 5 minutes; Parker's go netted :55 $\frac{1}{2}$ for the new 24-horsepower track racer. The summary:

Three laps, 4.17 miles, handicap—Harry Hill, 30-horsepower Simplex, 30 seconds, first; Guy Vaughn, 40-horsepower Decauville, scratch, second; E. H. Moses, 7-horsepower Stevens-Duryea, 3 minutes 30 seconds, third; time, 8:06.

Three laps, 4.17 miles, middleweight championship—E. Parker, 24-horsepower Fiat, first; Guy Vaughn, 40-horsepower Decauville, second; time, 4:16 1-5.

National circuit championship—Webb Jay, White steamer, walkover at one lap, or 1.39 miles; time, 1:43 3-5.

One-mile record trial—Webb Jay, White steamer, 48 4-5 seconds, world's record; former record, :52 1-5, by Chevrolet and Christie. Guy Vaughn, 40-horsepower Decauville, 58 2-5 seconds, middleweight record. Two twin track records—Bernin, in Renault, and Comancho, in Franklin, 1:15 3-5. E. Parker, 24-horsepower Fiat, :55 4-5, middleweight record from Vaughn.

Thomas cup race, four laps, or 5.56 miles—Walter Christie, 120-horsepower Christie, first; Webb Jay, 15-20-horsepower White steamer, second; time, 5:23 4-5.

Final heat, four laps—Webb Jay, first; Walter Christie, second; time, 5:28. Christie's time, 5:41.

GLIDDEN TOUR READY

New York, July 2—Judging from the rate at which entries are coming in and from the promises made, whose official nominations have not yet been made, not fewer than fifty cars will compete in the tour for the Glidden trophy, which starts Tuesday of next week. Up to noon today twenty-seven entries had been formally made. Entertainments galore are promised the tourists. The Hartford Automobile Club, the Pope Mfg. Co. and the

A. A. A. Race Meeting at Morris Park.

THE National Championship meet of the American Automobile Association was held at Morris Park, New York, on Monday and Tuesday, July 3 and 4, and an excellent program of races was arranged. The track, though dusty, was in good condition, and good racing was looked for on the opening day.

Monday's race meet, however, was shorn of much of its interest by a series of unfortunate accidents that scratched from the program the *Reo Bird*, the 90-horsepower Fiat driven by Paul Sartori and the new six-cylinder Thomas Flyer. The *Reo Bird*, while practicing before the races, skidded on the clubhouse turn, lost a tire and went through the inner fence, doubling up three wheels but doing no further damage, and throwing the driver, Dan Wurgis, who rolled over on the grass, dazed for a moment, but unhurt. Paul Sartori got lost in the dust of the back turn during his first race of the day—the heavyweight championship—and went through the inner fence, his huge machine picking up a twenty-foot length of iron pipe from the fence and carrying it into the field. Unfortunately there was a sixteen-year-old boy, Joseph Holihan, just inside the fence, and the flying iron struck him, inflicting serious injuries. His right leg was said to have been broken in two places and his left leg in one place; and it was thought his skull was fractured. Sartori was uninjured, but his nerves were all gone. In the same race the Thomas six-cylinder racer was disabled. While going around the turn at the clubhouse end of the track the right-rear wheel collapsed, and Roberts, who was driving, was rather roughly tossed about for a moment, but was not seriously injured. Just about this time news came filtering in from outside that two touring cars, one belonging to C. Oliver Iselein and the other to Charles Dale, had collided and that two or more ladies were painfully cut and bruised. People began to wonder if anything more was going to happen, but fortunately there were no more mishaps.

The racing surprise of the day was provided by Walter Christie's 120-horsepower racer, with a four-cylinder engine placed transversely at each end. In the first heat of the inner-club race for Dr. H. E. Thomas's trophy the double-ender representing the A. C. A. was pitted against the White steam racer of the Chicago A. C., and a grand race was anticipated. No sooner had the start been made than the gasoline car began to pull away from the rakish steamer, and the crowd immediately sat up and took notice. And when in the long straight of the back stretch Christie shot ahead, distancing the White, the people shouted, and it looked like a procession. Christie lost a front tire in the back turn, however, and could not even finish the first lap; the White finished the four laps in leisurely

time and took first place. The White car also won the heavyweight championship race in which the Fiat was driven by Sartori and the Thomas car came to grief; Webb Jay's only remaining competitor, Chevrolet, in Major Miller's 90-horsepower Fiat, was beaten by 19 seconds, the White making the last mile in the remarkable time of 49.35 seconds, according to the official timers. The 80-horsepower De Dietrich racer had been entered in this event, but was withdrawn.

In the Diamond Cup free-for-all the White and the Fiat again came together, with the same result, only that the White won by a wider margin. Later in the day Christie made an exhibition mile in 51.15 seconds, equaling the track record, his car running well.

The lightweight and middleweight handicap was won by a 24-horsepower Fiat. The tourists' novelty race went to the 12-horsepower Decauville, because the Wayne 16-horsepower car, which came in first by a wide margin, failed to obey the rules with regard to stopping for passengers. Guy Vaughan and the famous Decauville won the unlimited pursuit race, overtaking Eddie Bald in the 35-40-horsepower Columbia in 31.3 laps. The Bronx handicap was run in two heats and a final, the winner of the final being Comacho's 12-horsepower Franklin.

Austrian Industry and Market.

Some impetus was given to the automobile industry in Austria, especially in Vienna, by the fifth annual international automobile exposition, held there during the last two weeks of last March, under the auspices of the Austrian Automobile Club. The purpose of the show was to foster the trade in self-propelled vehicles for industrial purposes as well as for pleasure.

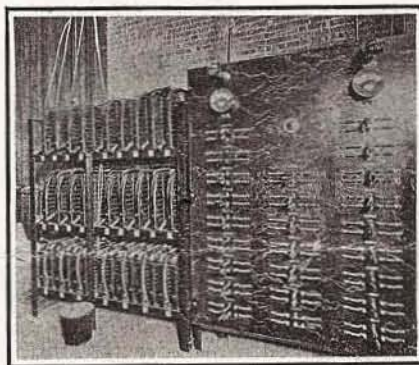
The development of the industry has been slow, it even having been said that it was confined to the manufacture of motorcycles. Only one automobile factory was built in Austria last year. The growth of the industry was threatened to be further retarded by a bill that was before the Parliament about the time of the show for the regulation of the use of automobiles; but the manufacturers and dealers collected statistics showing that in fact the use of automobiles was less dangerous than that of most other means of transportation, and that even dog-carts and children's carriages caused more accidents in Vienna than did automobiles. A commission was appointed and trials arranged, in which twenty-four of the commissioners, accompanied by army experts and members of the general staff and the technical corps with military cars, rode about the city and into the country to study grades. Apparently the trials were instructive, for the manufacturers and dealers are satisfied, according to United

States Vice-Consul Hogue, that the Austrian industry is no longer threatened by any contemplated radical regulations.

The automobile business in Austria does not offer inducements to Americans, considering the favor and sale of machines at home, and Mr. Hogue advises that until the home market has been supplied and it becomes necessary for our manufacturers to sell against hard competition and at small margins of profit, the market in Austria ought not to claim their particular attention.

Pope Garage Equipment.

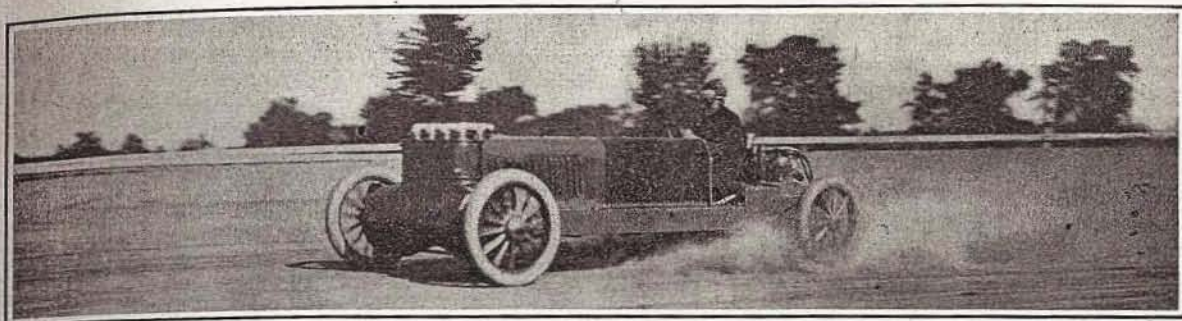
Electric automobiles form considerable percentage of the cars handled at the garage of the New York branch of the Pope Motor Car Co., and therefore it is necessary that there should be adequate facilities for taking care of the batteries—the storage battery being the most prominent portion of



CHARGING SWITCHBOARD.

the electric car, so far as the garage is concerned. Current for charging purposes is handled by a bank of twenty-five Cutler-Hammer rheostats, which, together with the switchboard used in charging small batteries, is illustrated by the accompanying engraving. The rheostats seen on the left, have a capacity of fifty amperes, with a voltage range of from 50 to 125 volts. Charging plugs are located at various points throughout the building, and all are controlled from the switchboard, where one man can watch the progress of charging each battery by taking frequent readings. The switchboard controls current for twenty-four charging plugs for ignition batteries, and the range of current is from half an ampere to ten amperes, with any desired voltage.

One of the features of the battery repair department is the manner in which the electrolyte is handled. Vats containing the fluid are elevated above the floor level, so that battery cells are filled by gravity, thus avoiding the necessity for carrying the electrolyte around in buckets, and the accompanying sloppiness and mess. Hoists are provided for handling batteries, and pits are conveniently located so that work on motors and other parts may be done without jacking up the cars.



WALTER CHRISTIE IN HIS NEW FOUR-WHEEL DRIVE CAR IN THE MORRIS PARK RACES.

just been removed from the plug will be at a distance of quarter of an inch from some part of the cylinder casting. Turn the shaft over until the vibrator buzzes and note whether a spark passes from the end of the plug wire to the cylinder casting.

IF THE SPARK IS WEAK.

If the spark is weak, it is probably because the battery is weak. If a test shows the battery to be strong, either there is a weak place in the secondary insulation, through which another spark is passed to the frame, or the spark coil itself is partly short-circuited inside.

A weak spark might also be caused by a defective trembler or by a loose or dirty connection in the primary circuit. If the vibrator is found to be in good order, the next thing is to disconnect the secondary or plug wire and test the spark between the high tension binding post on the coil and the frame of the car. In testing for a fault in the secondary wiring, never cut the insulation near any metal part of the car, or you may produce the ground you are so anxious to avoid. High tension currents leak on the slightest provocation.

(To be continued.)

July 4 Events at Morris Park Track.

COMPETITION on the second day of the American Automobile Association race meet at Morris Park track, New York, on July 4, was confined almost entirely to Webb Jay, in the White, and Walter Christie, in the Christie, racers, in the fastest class, and to E. Parker in the 24-h.p. Fiat

Junior, Guy Vaughan in the 40-h.p. Deauville, and Harry Gill in the 30-h.p. S. & M. Simplex, in the middle-weight cars. Damages to the Reo Bird light racer and Alfred Vanderbilt's 90-h.p. Fiat in the preceding day's racing had been too extensive to be repaired, and while Chevrolet was warming

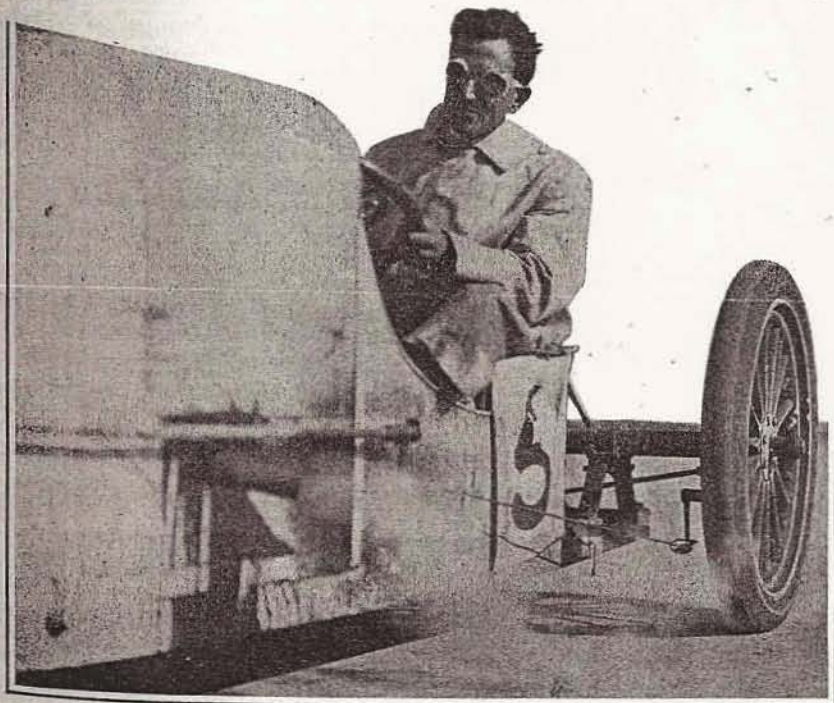
up Major Miller's 90-h.p. Fiat one of the cylinders cracked, so that it had to be withdrawn before the racing began.

The withdrawal of Chevrolet gave the race for the National Circuit Championship, that was to be run by Chevrolet and Jay, to Jay in a walkover, a circuit of the track being run in 1:43 3-5, to qualify.

Webb Jay was the particular star of the day, winning the plaudits of the 6,000 spectators as much by his magnanimity in consenting to the request of the A. C. of America for a runover of the previous day's heat with Christie for the Thomas interclub trophy, which Jay had won through the breaking down of the Christie car, as by his victory over Christie in the final heat for the Thomas cup and in the mile trials, in which he set a new mark of 48 4-5 seconds. This reduced the track record, made several weeks ago by Chevrolet in the 90-h.p. Fiat, by 3 3-5 seconds—a cut not likely to be equaled soon by any other car or driver.

There was a complete reversal of positions in the interclub race between Christie, representing the A. C. of America, and Jay, representing the Chicago A. C. In the run-over heat, Christie took the lead at the start and steadily increased it about 1,000 feet at the end of the third lap. Then in the last lap he was slowed down in the last turn by a flat tire, and Jay began picking up until at the end of the race he had reduced the lead to about 700 feet. Christie's time was 5:14 4-5 for the five and a half miles, and Jay's 5:23 4-5. The fastest mile was 50 1-5 seconds, made by Christie in the second lap.

The final heat, which was the last event of the day, was to have been run over a distance of ten miles, but owing to the bad condition of the tires on the Christie car, the distance was reduced to four laps (5.56 miles). Jay gained the lead in the first turn, but was passed by Christie in the backstretch, opposite the grandstand, and at the end of the first lap Christie was leading by 300 feet. Jay held his own through the second lap, and in the third began closing up rapidly on his opponent, keeping close to the pole on the big turn to avoid the dense clouds of yellow dust torn up by the heavy, low-hung Christie racer. On the fourth and last lap, the steamer overhauled and passed the gasoline machine, and won by 500 feet in 5:28 4-5. Christie coasted down the sloping home-stretch, and finished in 5:41 4-5.



WEBB JAY AT THE WHEEL OF THE WHITE SPECIAL STEAMER.

The Middleweight Championship, at three laps (4.17 miles), was contested by only Guy Vaughan in the 40-h.p. Decauville, and E. Parker in the 24-h.p. Fiat Junior. They got away well together, but the Fiat almost immediately went to the front, and was about 400 feet in the lead when the race ended. Parker's time was 4:10 2-5, and Vaughan's 4:16 1-5.

The Cracker Handicap went to Harry Gill, driving the 30-h.p. Simplex, with a handicap of 30 seconds, in 7:22, Vaughan in the Decauville running second from scratch in 7:25. There were half a dozen starters.

In the one-mile time trials two new records for Morris Park track were made, Jay's performance of 48 4-5 seconds breaking the record for all classes (incidentally the fastest mile ever made by any type of car on any sort of track), and Parker's time of 55 4-5 seconds, breaking the record for middleweight cars. Vaughan also got under the previous American track record time made by Bernin at Empire City track, by going a mile in the Decauville in 58 3-5. All these times were announced as "world's track records," notwithstanding complete circuits of the track were not made.

The weather was all that could be desired, and the track was in good condition. All that marred the sport was the absence of the many cars that were undergoing repairs and alterations in the shops, and the long delays occasioned by trouble with the Christie car and the cracking of a cylinder on Chevrolet's machine. The crowd displayed admirable patience, notwithstanding the tameness of the racing and the fact that for the thirty minutes of actual racing, it spent two hours and a half waiting for something to happen, and in complete ignorance of the causes of delay.

Following are the summaries:

National Circuit Championship, free-for-all, four laps (5.56 miles)—Webb Jay, White, won in a walkover of one lap in 1:43 3-5, owing to breaking of engine of Fiat, driven by Chevrolet.

Cracker Handicap, three laps (4.17 miles) Harry Gill, 30-h.p. Simplex (30 seconds), 1st, time 7:22; Guy Vaughan, 40-h.p. Decauville (scratch), time 7:25; Frank Leland, 7-h.p. Stevens-Duryea (3:30), third, time 8:06.

Middleweight Championship, for cars weighing 851 to 1,432 pounds, three laps (4.17 miles)—E. Parker, 24-h.p. Fiat Junior, 1st, time 4:10 2-5; Guy Vaughan, 40-h.p. Decauville, 2nd, time 4:16 1-5.

C. A. C. A. C. A. Interclub Race for H. E. Thomas Cup, runover heat from Monday, four laps (5.56 miles)—Walter Christie (A. C. A.), 120-h.p. Christie, 1st, time 5:14 4-5; Webb Jay (C. A. C.), 15-20-h.p. White, 2nd, time 5:23 4-5.

Final heat, four laps (5.56 miles)—Webb Jay, White, 1st, time 5:28 1-5; Walter Christie, Christie, 2nd, time 5:41 4-5.

One-mile Time Trials—Webb Jay, 15-20-h.p. White, time 48 4-5 seconds, announced as world's record; Guy Vaughan, 40-h.p. Decauville, 58 3-5 seconds, announced as record for middleweight cars; E. Parker, 24-h.p. Fiat Junior, time 55 4-5 seconds, announced as world's record (for middleweight cars).

How Autos Help One Line of Business.

Special Correspondence.

SAN FRANCISCO, July 5.—A practical and instructive test of the value of automobiles as a business adjunct has been made by Varney & Green, a prominent advertising and bill posting firm doing business on this coast with headquarters in this city. This firm has for the past year and a half been replacing buggies and teams with automobiles and has met with such success that the matter has gone beyond an experimental stage, and it is only a question of a short time when, in certain lines of its work, the firm will use automobiles exclusively. As the firm has between thirty and forty teams, this means a big innovation.

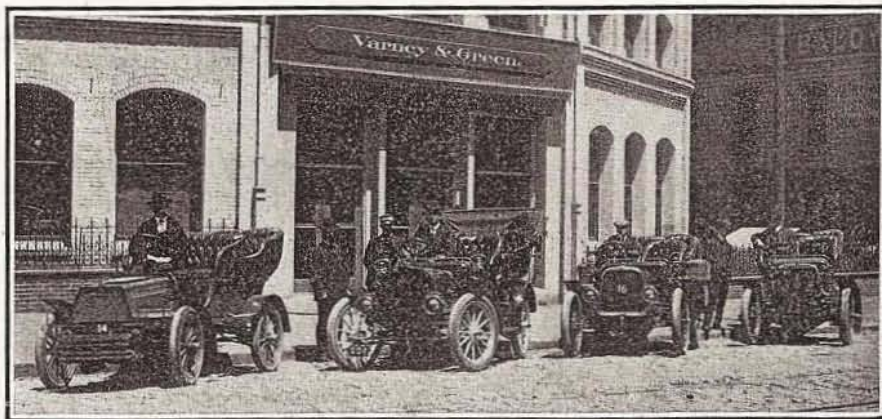
The firm now makes it a rule that every solicitor in its employ shall be provided with an automobile and a chauffeur and its experience in this particular has been such that the increased cost of the cars and their maintenance over horses and buggies is not regarded as worthy of consideration, while, in addition, the efficiency of the solicitors has been increased to such a degree as to call for large increases in the salaries paid to them. There is no pretense that the cars can be maintained for near the amount which was formerly charged off to the account of the horses and buggies, but the field that can be covered by the use of the automobiles is so much larger and the consequent increase of business so great, that the members of the firm state that the item of increased cost is not to be considered for a moment. The firm is now using six Pope-Toledo cars, three being of the two-cylinder model and three of the four-cylinder type, and is now arranging for the purchase of others. As Mr. Varney says: "We can use five more cars to advantage at once, and when we get them we will probably find we can use ten more."

In telling of their experience, Thomas H. B. Varney, the senior member of the firm, says:

"I got my first car two years ago, and for some time used it for myself, both as a pleasure car and in connection with my own

business duties with the firm. For about a year and a half this and the additional cars have belonged to the firm, and in practically that time the business has increased 50 per cent., a fair portion of which increase is due to the use of automobiles. My first car was a two-cylinder Pope-Toledo and I soon found it so valuable in my business that I proposed to Mr. Green that the firm buy it. I was using it in the firm's business to so great an extent that I felt the firm should stand the maintenance, expense, which at that stage of my experience with cars was a very considerable amount. Mr. Green at first objected strongly, and I continued to use the car as my own property. After a time Mr. Green began to use it, and when I next suggested the matter of turning it over to the firm, he agreed that we could not do without it. We then got more cars and began to observe the improvement at once.

"In our business we have a considerable plant of fences, etc., bearing the advertisements of our customers, which have to be shown in the work of soliciting new business, and which have to be checked off in the course of 'proving up' our work with the firms with which we hold contracts. Take a single firm which I now have in mind, with which we do a large business. The men who look after checking up our stands are very busy throughout the day, and when we were using horses and buggies it would take about three trips to complete the checking up process. We would get them out for one trip and cover about a third of the plant. It would then be a week or two, after considerable urging, before we could get them out on the second trip. The final checking up was a very hard matter to secure, and in some instances it would not be possible to get at it until the contract time had expired, and some of the boards had been stripped. Now we cover the whole ground in a single trip of two or three hours, and we never have the least trouble in getting the



HEADQUARTERS OF MESSRS. VARNEY AND GREEN IN SAN FRANCISCO, CALIFORNIA.