

TO PIT POWERFUL ENGINES

Pians for Race Between Big Benz and Fiat Cars.

SABER AGAINST THE RAPIER

Wild Bob of Haphazard Fame to Drive Against Facile Felice Nazzaro, the Foxy Young Italian.

NEW YORK, June 5.—Arrangements are under way to race the two most powerful automobiles in the world at the Brooklands track, England, within the next few months. Word from London is to that effect. The lowering of Barney Oldfield's two-mile, one-mile and kilometer records on Daytona beach clinched the proposition. Wild Bob, as the new record holder is called, will be taken to England by his manager, E. A. Moros. Negotiations are under way to pit Burnam's Bitzen Benz against the new Fiat, under construction at Turin, Italy. Felice Nazzaro will probably handle the Fiat if the race is arranged.

It is said that Burnam and Nazzaro will meet in a series of match races at Brooklands on Memorial day. The 500-mile race at Indianapolis fails on the same day. Burnam has not entered the latter contest, so he is free to compete in England. Burnam's entry was withdrawn, it is said, until a financial decision was made regarding Brooklands.

A meeting between Burnam and Nazzaro would be most sensational. The distances of the events would have to be short—say, a half, one and two miles. The engines of the Blitz and the new Fiat develop such great heat that the cars cannot be raced a two-mile-a-minute speed for anything but short distances. It would be a meeting between products of two European factories reputed for turning out special speed machines. The Benz works at Mannheim, Germany, and the Turin factory of the Italian Fiat have turned out many great racing machines. Before the Bitzen was the Prince Henry Benz, and before the new Fiat was the car in which Nazzaro rode to a world's speedway record at Brooklands two years ago. Later that car was brought to this country and christened the "Mephistopheles Fiat." Lewis Strang drove it to a mile record at the Atlanta speedway, but was criticized for racking the engine.

Burnam and Nazzaro are distinctly opposite types of drivers. As the name Wild Bob would indicate, Burnam is a headlong, batten-his-way-through driver on the order of George H. Robertson, now retired. With all, he combines great skill with his daring, and since the retirement of Smiling George he has been called the best all-round pilot in this country.

A match between the men could be likened to the meeting of a saber and a rapier. Nazzaro is an Italian, and his driving is characteristic of his race. Sensitive, artistic looking and finely skilled, he will be the swift rapier against the sweeping saber. There is none of the Wild Bob about this cool Italian. Fellow does perfectly to preclude his family name without any combinations. Facile Felice would be about the only alliteration suited to the case. It is almost uncanny skill and a quiet courage with Nazzaro. The only regret is that America will not see the crossing of the saber and the rapier.

One Hundred Motors Are Entered in Yale Hill-Climbing Race

Ralph De Palma Will Go After Record with Ninety Horsepower Simplex.

NEW HAVEN, Conn., June 2.—More than 100 entries, amateur and professional, are assured for the Yale hill climb on Shingle Hill, West Haven, Conn., on Saturday, June 10. Last year the list of contestants almost equaled this number, while in 1909 there were eighty-five entries. The fact that the Yale Automobile club has joined hands with the New Haven Automobile club in an effort to make this season's event a nationally large hill-climbing contest assures a great program. With Ralph De Palma in his ninety-horse power Simplex (the same car with which Robertson won the free-for-all class at this course last year); David Bruce-Brown, winner of the Grand Prize race in a Fiat; Caleb Bragg with his ninety-horse power car of the same make, and a host of other pilots tentatively entered, the competition will be brisk. Bragg and Bruce-Brown, being Yale graduates, naturally are loyal and made first entries.

Numerous nominations were held back pending the result of the 500-mile race at Indianapolis. Louis Disbrow will enter the Pope "Hummer" at the Yale event, provided he can get it shipped east and tuned up in time. This car has not yet been seen in slope contests, but judging from the way it broke so many world's records at Jacksonville, the car no doubt can show well on the hills. Disbrow, by the way, is considered one of the best hill-climb drivers today. He has won numerous competitions of this character with cars of other makes.

Large cash prizes are offered for the drivers in addition to cups for the amateur pilots and entrants. In the free-for-all events \$100 will go to the winner and \$50 to second best. In the class C events \$35 is offered for each. Motorcycle competitions are also cared.

Shingle Hill is nine-tenths of a mile in length and is no easy course. Bruce-Brown holds its record, 51 seconds flat, made with the "Henry" Benz. The contest idea was inaugurated in 1908 by George H. Townsend II and members of the Yale Automobile Club. Bruce-Brown won the first affair, driving the late Cedric's Biarritz car. He also won in 1909, while last season the feature of the meet was the battle between Bragg and Robertson. The latter won by a close margin.

BEND AROUND THE CURVES

Locomotives so long that the boilers have to be jointed to enable them to take curves properly are the latest thing in traction, and may be seen on the Santa Fe road. Locomotive boilers have for some time been made in two sections, but the introduction of a flexible joint is a new idea described in the Engineering News (New York). The immense length of boilers on locomotives having from six to ten driving axles is liable to cause interference with bridge abutments, the walls of tunnels, or with trees standing or passing on an adjacent track.

These difficulties suggested the use of a flexible boiler, formed by the use of a flexible connection at the separable joint. Two engines embodying this principle have been built, each having a distinct type of flexible joint. Under this arrangement the rear section is attached rigidly to cross-trees or bearers on the rear main frames in the usual manner. The forward section is rigidly attached in the same way to the main frames of the steam truck. This arrangement eliminates the use of sliding supports to permit the truck to swing free for the boiler. It is expected to reduce curve resistance and flange wear, and also

to give the engine greater stability when on curves, owing to the absence of lateral displacement of the boiler on the truck. In addition to this, there is less complication of the steam piping. On a 15-degree curve the two sections of the boiler form an angle of about 175 degrees, instead of forming a straight chord line.

"On one of these two engines the flexible joint is a modification of the ball joints commonly used in subaqueous crossings of water mains, etc. . . . The joint consists of two cast-iron tubes or sleeves, somewhat smaller than the boiler shell and of such diameters as to telescope together. One end of the sleeve is formed as a segment of a sphere, and is fitted to a corresponding segment bolted to the inside of the boiler shell. The latter segment is made in two pieces for convenience in erection. Packing rings are fitted to the sleeves and to the spherical surfaces; those on the latter are of soft metal and they can be adjusted by means of set screws. The telescopic portion forms a slip joint for expansion and contraction, and the spherical connections permit of the necessary lateral flexibility."

WATER POWER TO WORK SHOPS

Carrying Electrical "Juice" from the Producer to Distant Consumers.

Every day or two we read that another distant mountain waterfall or the rapids of some powerful river has been harnessed to whirling waterwheels and electrical generators and the power carried across the hills and valleys several hundred miles to the cities and towns, where it can be used for light, heat and power. It is easy enough to understand just how falling water will turn a waterwheel and how this wheel can be made to whirl an electric dynamo, or generator, but how this power is carried away to the city remains a blank and puzzling mystery to most of us unskilled in interpreting electrical lore.

There are two ways in which this electrical horse power can be carried over the hills to the cities. The first is to use a cable or wire by a long line of pulleys and belts, the second is to use a pipe or tube.

To carry this enormous amount of energy a hundred miles in a basket would necessitate its being used to charge large storage batteries and these batteries would be carried by horse power on the railroads to the cities where they were to be used. When the batteries were discharged they would have to be returned for charging. All this would be expensive, not to mention that it would be unhandy and far from being in accordance with business methods of this day and age.

The electrical engineer quickly found a better way to transmit this "juice" to a paying market. This was no small task, remember, because with the first dynamo used it was quite impossible to transmit electrical energy to any considerable distance. Three things made long distance transmission of electricity possible—alternating current, the development of the high tension insulator, and the transformer. The principle involved in sending electricity over great distances is to use a very high voltage or pressure with a correspondingly small current. The power transmitted over a wire is represented by the product of volts times amperes, or pressure times volume. To transmit a lot of power over

a wire, therefore, if you use a very high voltage you can get along with comparatively few amperes. As the size of the wire is proportional to the number of amperes carried, you can get along with a small wire by using a high voltage and low amperage. It is just the same as though you were to undertake to pump a given amount of water through a pipe. If you were to use a pipe of ten pounds per square inch, you would need to have a large pipe to get the water through the pipe. On the other hand, if you were to use 100 pounds pressure per square inch, you could get the same amount of water through a very much smaller pipe, thereby saving money on the pipe.

Before alternating current came into use, it was impossible to obtain current at high voltage, except by building a special and very costly dynamo, and even then, they could only get a few thousand volts. To attempt to transmit many miles with only, say, five or six thousand volts available pressure, means that to get much power over a line, a very great current in amperes would need to be sent over it—remember, power equals volts times amperes. As a consequence, the copper wires would have been so large and costly as to be out of the question. They would have been massive bars of copper.

Then, along came alternating current, and with it, the transformer, a comparatively inexpensive device, which will take the current from an alternating dynamo and step up the voltage almost to any point desired. Suddenly, engineers had equipment available for producing current at high voltage, first 30,000 to 50,000, and lately even at 125,000 volts. Then long distance transmission became possible, for with the high voltage it was possible to use wire small enough so that to transmit current over a distance of several hundred miles, the interest on the money invested in copper wire would not be out of proportion to the receipts from the sale of power.

The development of long distance transmission from fifteen or twenty miles, at first, to over 300 miles, has been largely a matter of developing insulators which would prevent the current from leaking out of or slopping over from the line. Lately, they have produced insulators which will carry 125,000 volt wires safely. When 200,000 volt insulators are made, wires will be reduced in size and the

lines may then increase in radius another hundred miles.

THIS SPEEDER CHEERFUL WHEN CAUGHT BY POLICE

"Costs Money, but We Must Have It," Declares Dixon, Paying Over Cash Bond.

"It costs money to take a pleasure trip to Omaha with an auto," said Ass. Dixon, a business man from Blair, Neb., while he was being booked at the police station Friday evening charged with speeding along the south boulevard.

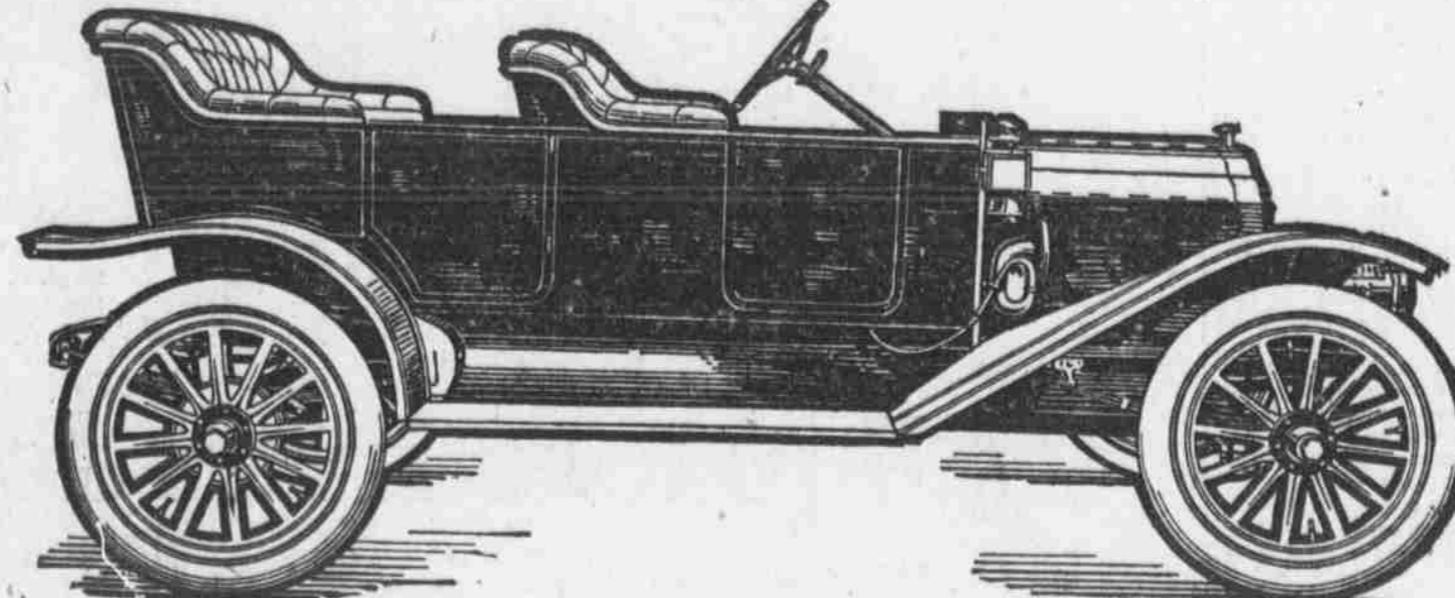
"Nevertheless," continued Mr. Dixon, "it is worth it to have a good, jolly time when a fellow comes on a trip to this city." Mr. Dixon was accompanied by another business man and two women, all from Blair.

The flying squadron placed only Dixon under arrest and he had no hesitation in depositing \$5 cash bond, for his appearance in police court this morning. Then the party went on rejoicing.

The Key to the Situation—He Want Ads.

Flanders "20" Fore-Door

With 3-Speed Selective Transmission



\$800

EVER SINCE THE ADVENT of the famous Flanders "20" nearly two years ago, we have been deluged with requests for a touring body on this sterling light chassis. These requests came from thousands of good folk, who felt they could not afford, or didn't care to put \$1,000 or more into an automobile—of course, at \$1,000 there's only one choice—E-M-F "30."

TRUE, THERE WERE OTHERS—several makes of cars selling for less than \$1,000 and equipped with "touring" bodies. But in the eyes of discriminating buyers these possessed disadvantages that left them out of consideration—for example: inadequate power and chassis strength; two speed transmissions and mostly of the power-consuming, noisy "planetary" type. The planetary transmission may be "fool proof" as claimed—but it does not appeal to the mechanically well informed.

FLANDERS "20" DIDN'T BELONG to that class of cars at all. When Engineer Heaslet undertook to design this model for the E-M-F Company, he set himself a high standard—that of creating a chassis of medium size that should combine all those features which heretofore had been considered obtainable only in cars selling for four times as much as Mr. Flanders proposed to ask for this car.

THAT HE SUCCEEDED IS HISTORY. True, Flanders "20" in its first few months of existence had to pass through most of the infantile troubles that every new model, no matter by whom designed, must pass through before it reaches that state of perfection that is the designer's ambition. Flanders "20" had its teething troubles, then the measles, mumps and a slight attack of the whooping cough—that last is automobile language for carburetor crankiness.

PERHAPS THIS SURPRISES YOU—this brutal frankness of ours. It is the despair of our competitors. They never can understand why it does not injure us irreparably to tell the public what they consider factory secrets. Confidentially, we believe this is the secret of our success. We are dealing with intelligent people—practical business men for the most part. Infallibility is not to be hoped for in human beings. So it has always been our policy to speak frankly to readers of our ads. It not only disarms unfair competition, but has won for us a confidence on the part of buyers that we consider our chief asset.

YES, FLANDERS "20" HAD ITS TROUBLES in the early days. But—and here's what you are mostly interested in—every Flanders "20" car sold carried with it a full year's guarantee by a company worth several millions of dollars. Not only that, but the buyer knew that the men who signed that guarantee were not in the habit of splitting hairs—would make good not only the letter, but the spirit of that guarantee. And we did—to such an extent that there are today 7,000 boosters of this car—satisfied owners.

WHILE WE ARE ON THE SUBJECT let's go back three years. E-M-F "30" was then in its first year. It also had its infantile aches and pains. This company was new then, but the men at the head of it realized that permanent success depended absolutely on backing up our product in the most liberal manner. We had expected small weaknesses to develop during the first few weeks that the new model was on the roads in hands of owners. Why? Past experience—which teaches us that, no matter how severely a new model may be tested by factory experts, defects will develop, when 500 cars are in hands of owners operating under 500 different sets of conditions—defects that no one could possibly foresee or provide against. That's the reason for a manufacturer's guarantee—and before you buy any model—ours or the other fellow's, let us warn you to look well to the kind of guarantee that goes with it, and particularly to the character of the men or the firm that signs it.

WHAT A MARVELOUS RECORD E-M-F "30" has made since that—nothing like it has been known in automobile history. For three years it has been first choice of discriminating buyers and every car has been sold, not by a salesman, but by another owner. And so well did we take care of those first 500 cars, any man who now owns one of that famous first litter to which "Old Bullet" belonged, staunchly claims he has as good a car as we have ever turned out since.

FLANDERS "20" REPEATED HISTORY—that's all. And today we are able to say of this great little car it as good as its older brother E-M-F "30"—and more could not be said of any automobile.

BUT ABOUT THAT TOURING MODEL. Until recently we have turned a deaf ear to the entreaties of dealers and individual admirers alike—those who wanted a Flanders "20" touring car. The reasons have been set forth above. We had determined first to give the car a full year in hands of owners with the lighter runabout and suburban bodies—watch the performance of every car carefully, and make improvements or refinements wherever opportunity occurred.

SHE IS IN HER SECOND YEAR NOW—infantile diseases long since passed and every defect however slight—whether in mechanical construction or merely in exterior appearance—has been corrected and such improvements made as the progress of the science of automobile making and steel treatment has made possible. Today we are able to say—and back it up with that same guarantee—that in all the world there is nowhere else such value to be had in a car of this type as in the Fore-Door Flanders "20."

THE RULE WE HAVE WORKED TO in perfecting this light car model has been, "when in doubt make it like E-M-F "30"—a rule some of our esteemed competitors have emulated assiduously of late, by the way. You'll find, therefore, many points of similarity in the two cars—and that alone is guarantee of the excellence of the new Flanders "20" model.

ONE FACTOR THAT HAS HELPED in this process of improvement has been the drop in prices of materials—which we predicted in a recent E-M-F ad, and were so roundly scored for by competitors, who thought it was bad for the public to be advised of that fact. For example aluminum is much cheaper today than two years ago. Results, we are able to use that semi-precious metal in the motor crank-case and transmission housing of Flanders "20" now, whereas, it was absolutely out of question then. We reduced the weight very considerably by using aluminum.

THE THREE-SPEED, SELECTIVE TRANSMISSION is another feature that will appeal strongly to the experienced. For the runabout models the two-speeds are all right, but it's a mistake and a grievous one in any touring car. Not only does it interfere with the pleasurable operation of the car—and every Flanders "20" owner drives his own car—but it subjects motor and transmission mechanisms to undue strains when starting or climbing hills or negotiating very bad stretches of roads. It won't do.

WHEEL BASE IS 102 INCHES—only 6 inches shorter than the larger model. Ample room for five large adult passengers and longer than any other car of similar class. Weight, only 1,600 pounds, and as this "20" horse-power motor actually develops about 25 per cent more power than its rating you have power to carry you anywhere at as rapid a pace as you will ever care to go. And she's a wonderful hill climber.

LESSER IMPROVEMENTS ARE: Detaching exhaust manifold. Formerly, cast integral with the cylinders this feature developed defects similar to those from which other makes or higher priced cars, which also adopted this foreign idea last year, are still suffering. You don't know which ones? Ask your dealer.

CARBURETOR HAS BEEN PERFECTED so as to give still wider range of flexibility and with simpler adjustment—similar to E-M-F "30." Flanders "20" carburetor now gives uniform results in mile-high Denver and sea-level Florida.

WORM AND WORM-WHEEL STEERING has been adopted in place of the former internal-gear device. Absolutely irreversible. Four times longer lived—because four times as much wearing surface. Also adjustable for wear. Equal in every way to that of E-M-F "30."

SEVERAL OTHER MINOR POINTS have been refined—improved is hardly the word, for there was nothing to be desired in efficiency. Still, there was one point—valve action—where not only refinement was possible, but about 20 per cent increase in power was obtained.

MAGNETO AND COIL are part of standard equipment of course—Splitdorf, and attached same as on the larger car. Accessible. So are several other parts that formerly were a trifle difficult to get at. Radiator is raised slightly so the starting crank no longer goes through the radiator. Looks better, that's all. Cooling properties of this car always were ideal. Rear axle has been made heavier to support the heavier passenger load. Double strut rods. Brakes twice as wide as before—will slide the wheels on any surface, yet won't chatter nor jerk, no matter how severely applied. Lined with thermoid.

THINK HOW MUCH WISER IT IS for a concern to adhere to standard models and improve from year to year as we have done with Flanders "20" and E-M-F "30," rather than to constantly chase false gods and offer radically new models to the buying public as fast as the seasons roll around.

IS IT ANY WONDER other concerns are trailing in the rear while the E-M-F Company continues to set the pace and constantly increases the distance between? You know the A. L. A. M. report for the last quarter of 1910, just issued, showed the E-M-F Company to be the largest producer of automobiles in the world. Those figures cannot be refuted. And the chief reason is we do not run away from our troubles, but make good to every buyer—and we get our share of the unreasonable ones—and continue to improve and refine our product far in advance of the times and the demands of buyers.

NOW ABOUT THAT FORE-DOOR MODEL. First, let us say this body is not a makeshift one, designed to fit a runabout and be interchangeable. Not at all. It is specially designed for this chassis, which, as we have shown above, has been designed to receive it. Ample seating capacity and just as well trimmed and finished—just as many coats of varnish and same quality leather and hair as that used in E-M-F "30."

THE PRICE—\$800—IS SENSATIONAL—leaves no real competition for this car in the field. Meets exactly the needs of buyers, who just can't quite reach E-M-F "30"—and gives them a car made of exactly the same materials, by the same wonderful organization and backed by the same guarantee as E-M-F "30"—just a size smaller, that's all.

E-M-F Co., Omaha, 2026 Farnam St.