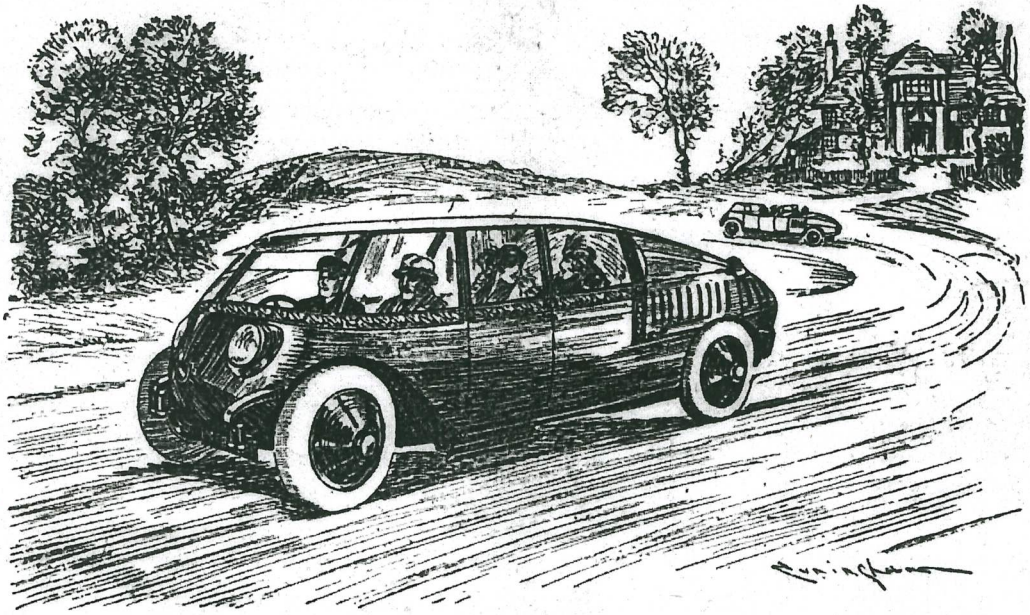
THE CAR OF THE FUTURE — AN INTERESTING FORECAST IN 1923 MATERIALISED IN 1928



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THE progress made during the past few years in chassis design shows great possibilities in improving not only the appearance but the comfort of motor cars. The motor car of the future will still undergo radical changes in a constructional sense, and many of the components will be modified or suppressed altogether. Some of the most prominent automobile engineers have already made great strides in this direction.

In an article which appeared in the "*Motor*" dated Nov. 6, 1923, some very interesting remarks were made as to the probable 'motor car of the future'. The illustration that we take the liberty of reproducing showed roughly five years ago the writer's conception of the car of the future, which resembles the French made *Claveau* car, which we reviewed recently.

One would think that the designer of the *Claveau* had been inspired with the idea suggested by the '*Motor*', however from our own enquiries we find that Mr. Claveau designed his car himself and owing to certain insurmountable difficulties in the construction of the chassis frame, he was compelled to design the chassis and body so as to form one organ, which eventually resulted in the complete car taking the special form forecasted by the '*Motor*' and realised as shown in our photograph.

The author rightly said that a 'freak design of today often proves to be the accepted practice of tomorrow, although the motor car of today and tomorrow must necessarily be separated by a period of years during which designs are reduced to a practical shape by exhaustive experiments'.

Such is the case with the *Claveau*, a period of years has elapsed during which exhaustive tests have been carried out at considerable expense, however patience has been rewarded, for the *Claveau* type today is an accepted practice.

The *Claveau* system merits the attention of all car dealers, the design is practical and the general lines of the complete car are certainly pleasing. The reduction in the number of organs has considerably lightened the car, which is an advantage. The chassis was described in our October issue, however in response to many enquiries from abroad we have pleasure in giving our readers some further particulars of this interesting production.

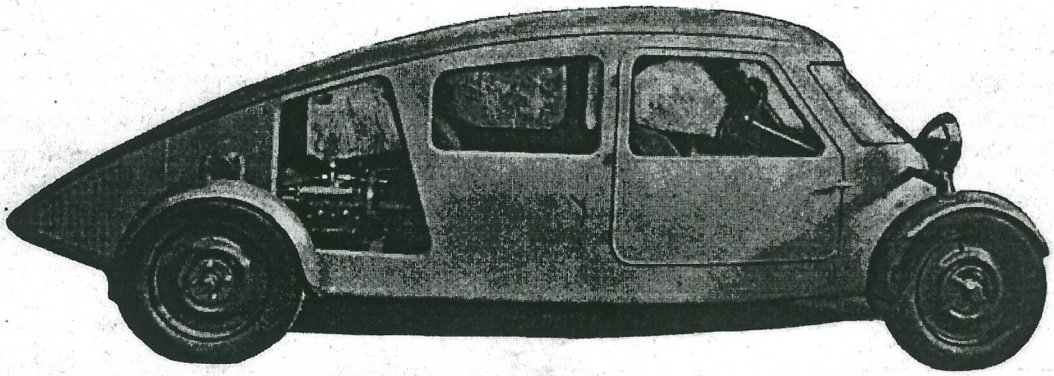
Certain problems have been treated in a clever manner, amongst them is that most difficult and neglected one in connection with improving the present day form of springing or suspension. The springing of the present day motor car is exactly the same as it was in commencement. A variety of shockabsorbers have been introduced on the market

for the purpose of reducing the excessive vibrations which have such a deteriorating effect upon the chassis and coachwork, with more or less problematic results.

The recent introduction of the balloon tyre is another effort to eliminate road shocks and increase passenger comfort, but undoubtedly this problem must be attacked by the automobile engineer instead of the tyre or accessory manufacturer.

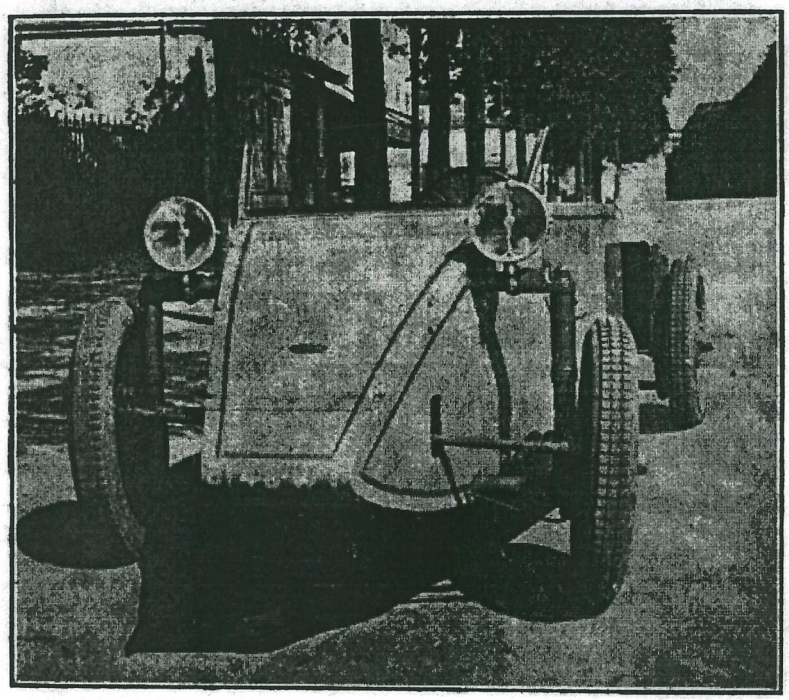
springing. The small cars suffer the most; in the case of the larger models, the long wheel base and use of long flexible springs in conjunction with a shock absorber have considerably improved the running with cars weighing over a ton, but this does not mean that any progress has been made in the design of automobiles in regard to the suspension.

M. Claveau first exposed his car at the Exhibition of 1926.



The Claveau which reseembles closely the suggested car of the future referred to on page 19.

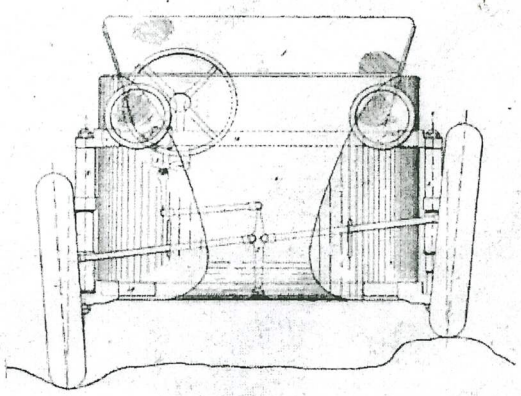
One or two advanced designers have had the courage to tackle the question with results that give us hopes that in the near future we shall have better



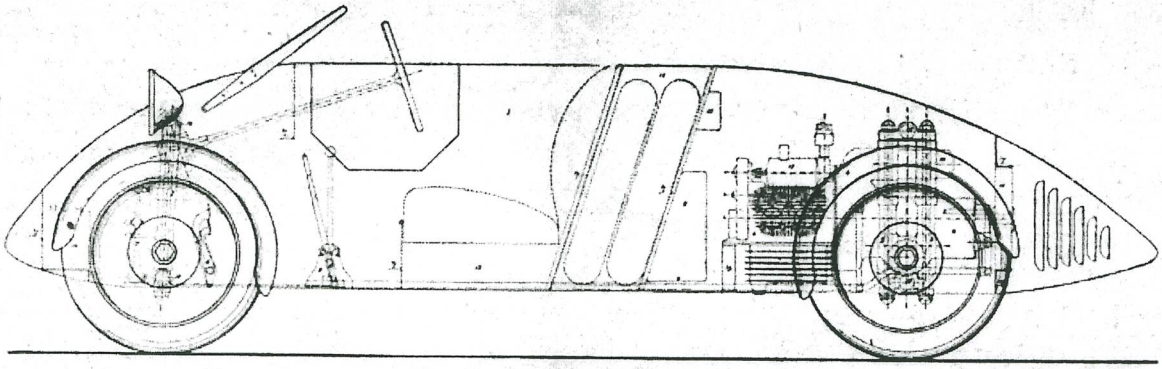
Front view of the Claveau.

The simplicity of the scheme employed to constitute a car of which the body and chassis form the same organ with its independent road wheels is not only original but a mechanical conception that has proved itself successful under all road conditions whatever may be the state of the road surface.

The inventor has grouped the engine, clutch, gear-box and differential in one bloc, thus reducing considerably the cost of construction. M. Claveau, in order to arrive at the realisation of his ideas of



Showing the action of the articulated road wheels, which are a feature of the Claveau chassis.



Section of the Claveau chassis showing the disposition of the various organs.

grouping the power unit and transmission organs had to utilise a special form of sheet steel support which called for the suppression of the chassis frame, a stronger section of sheet steel was therefore employed; so arranged that it formed a shell constituting the chassis and body.

This shell is at the same time rigid and very light. The absence of elasticity in the 'ensemble' necessitated the use of independent road wheels. The question of independent or articulated road wheels has been studied by many eminent engineers, but the difficulty of their adoption with chassis such as are now being turned out by most factories is practically insuperable. The use of articulated road wheels demands a complete reorganization of the design and for this reason has simply been carefully studied for some future date.

The design of the *Claveau*, whilst perhaps contrary to accepted ideas, is undoubtedly constructed on lines that will be more general in a year or two. We have expressed our opinion in these columns concerning the advanced ideas of several of our engineers in connection with the improvements in springing of automobiles, and although their original attempts were considerably criticised by constructors, time will prove that the public will be the first to recognise the importance of articulated road wheels. The advantages are so great that it is suprising that some of the big concerns have not already adopted this system, especially for their lighter models which suffer considerably from vibrations over bad roads.

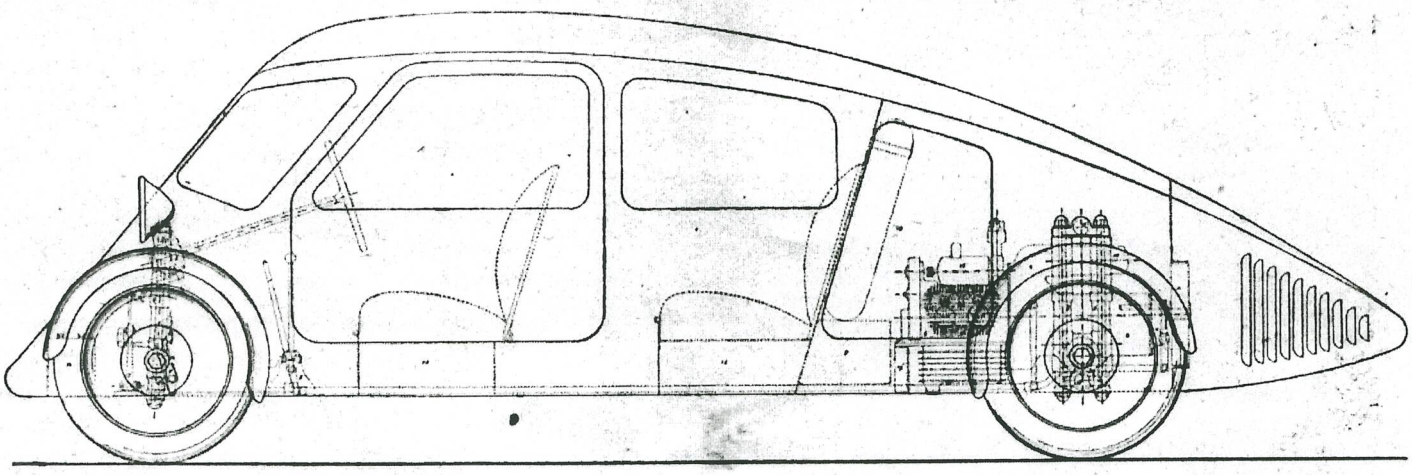
The suspension of the *Claveau* may be likened to the Lancia-Lamba, composed of telescopic springs enclosed in upright tubes with a suitable form of articulation with the springs working in oil. This form of suspension permits the centre of gravity being placed lower than the wheel centres.

At the rear of the vehicle are placed the engine, gear-box and differential, the drive being direct to the rear road wheels without the intervention of a cardan shaft. The 9 hp. engine has four cylinders with lateral valves, the bore being 66 mm. with a stroke of 91 mm. The cylinder head is detachable, the plugs are placed centrally in the combustion head. The crankshaft is of robust design and is supported in two very large ball bearings.

Pressure fed lubrication assures an efficient supply of oil under all conditions, the oil reservoir being separate. The clutch is of the inverse cone type lined with cotton-asbestos material, it is progressive in action. A three speed gear-box forms bloc with the differential.

The engine is of exceptionally good design and is very accessible, in fact, two men can easily dismount the unit and the two radiators in about a quarter of an hour.

The transmission from the differential is by two shafts with two cardan joints. The electric starter is fitted to the front end of the crankshaft, the ignition is by a distributer taking the current from a 12 volt battery.



Section of the Claveau enclosed drive model with a seating capacity for five persons.

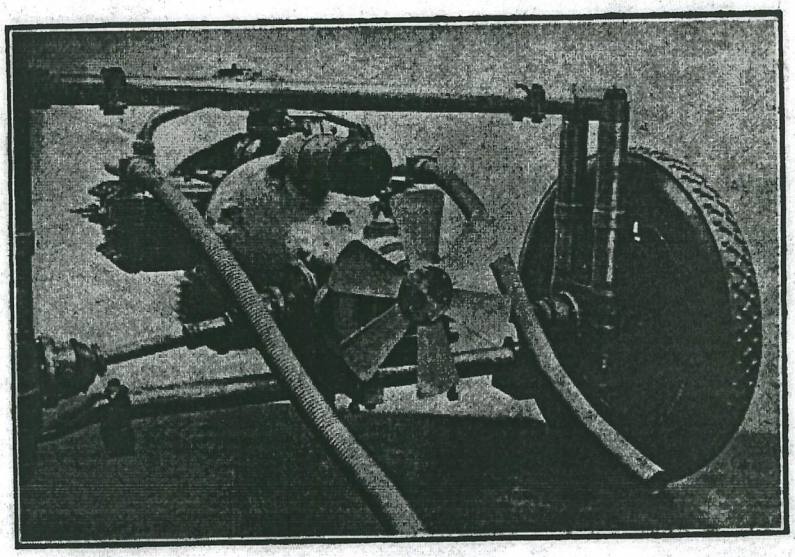
A feature in the design of the shell forming the body is the very ample and comfortable seating capacity accorded to the driver and passenger; the placing of the power unit at the rear, completely protected against the elements, has lowered the centre of gravity, and in spite of this the ground clearance is about 22 cm. or say 8⅝ inches.

As will be seen from the drawings the spare wheel is carried behind the driver's seat: in the four seater model it is enclosed at the rear.

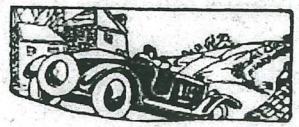
Two models are being made — the two-seater Sports model, 7 hp nominal, 6 cylinder engine of 66×91, thermo-syphon cooling, pressure lubrication, inverse cone clutch, three-speed gear box, servo-brake on all four wheels, 27×4.40 tyres, speed approximately 115 km., or say 71 miles, an hour, consumption about 7 litres per 100 kms or a little over 2 ¼ gallons per 100 miles. Wheel base 2 m. 40 (7' 11"), track 1 m. 30 (4' 3").

Tourer model with a seating capacity of 4 or 5 people, chassis characteristics as above, wheel base 2 m. 80 (9' 3").

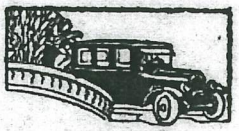
The new 4 hp *Claveau* with its two-cylinder engine will interest readers who desire an inexpensive run-a-about with all the comforts of a modern car. This new model is well under way and will be placed on the market very shortly. The price will be low so as to compete with the motor cycle and side car, however we will in due course refer to the 4 hp. Claveau after having submitted it to a severe road trial.

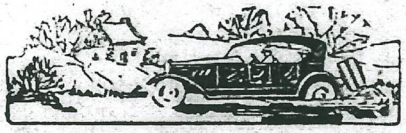


Photograph showing the power unit as fitted to the rear axle. The tubular telescopic spring supports will be noticed. This system permits an independent action to each road wheel which greatly improves the running over bad roads.



THE BUYER'S GUIDE 1928





All prices and dimensions are given subject to modification without notice on the part of the makers, and must not be considered binding.

The information is given in a general sense. Further particulars can be obtained either from the Constructors or the Journal.

PRINCIPAL DETAILS of the AUTOMOBILES MANUFACTURED in FRANCE

Whilst every effort has been made to avoid errors in the compilation of this Guide, no responsibility can be accepted by the Publishers.

All prices are those quoted up to the date of going to press, certain modifications are possible owing to the fluctuations of the prices of raw material, labour and the rate of exchange.

REFERENCES. — M-magneto. AC-accumulator. D-Delco. MC-magneto or Delco. MM-magnéto & coil C-cardan drive. CC-cone cluch. MD-multiple disc cluch. SD-single disc clutch. IC-inverse cone clutch. DD-dry disc. D2-two disc. D3-three disc. FB-four wheel brakes. AR-rear wheel brakes. SB-servo brakes. DB-differential and rear wheel brakes. SP-special patented. F-friction drive. 4X-special 4 direct drives. CH-chain drive. WD-worm drive. LS-long and short chassis made, also special sports models. Y-any standard types of coach work. S-without tyres. Z-normal chassis 3 speeds, long chassis 4 speeds. *-long, short & sports chassis made. SSK-sleeve valve engine, Knight licence. R-independent road wheels. SS-sleeve valve engine. RM-front wheel drive. LV-Lateral valves. OV-overhead valves. CM-Super-charger. IM-imitation racer. TF-Targo Florio model.

NOTA :—*In some cases the prices include the French taxe-de-luxe, which must be deducted on all cars exported. All prices including this tax are marked with an asterisk (*).*

Those models not listed with front wheel brakes can invariably be supplied equipped with one of the best known systems at an extra cost.

In several cases, prices, weights and dimensions have been omitted, owing to our question form having been incompletely filled in by makers

IMPORTANT :

Owing to the fluctuations in the rate of exchange most makers are unable to state a fixed price for their chassis.

MAKE	TYPE	HP (French)	CYLINDERS	BORE	STROKE	IGNITION	SPEEDS	TRANSMISSION	CLUTCH	BRAKES	TYRES	WHEEL BASE	TRACK	COACH SPACE	WEIGHT CHASSIS	WEIGHT TORPEDO	TOTAL LENGTH CHASSIS	TORPEDO	CHASSIS PRICE AT WORKS	TORPEDO	ENCLOSED DRIVE 2,3 or 4 seats according to size of chassis.
												Ft. Ins.	Ft. Ins	Ft. Ins.	Lbs	Lbs	Ft. Ins.	Ft. Ins.	French francs		
Amilcar	C4	6	4	58	95	M	3	C	MD	DB	700×80	8-1	3-7	—	825	—	—	—	17,900.—	21,900.—	—
»	—	8	4	60	95	M	3	C	MD	FB	715×115	8-6	3-11	—	990	—	—	—	—	—	29,900.—
»	J	12	4	73	112	M	4	C	DD	FB	—	—	—	—	—	—	—	—	30,900.—	37,900.—	—
»	Racer	—	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	82,000.—	—
Barron-Vialle	B 6	10	6	70	90	M	4	C	SD	FB	—	10-5	4-9	8-1	2420	—	13 9	—	—	—	—
Ballot	Normal	10	4	69.9	130	M	4	C	SD	FB	820×120	10-3	4-5	—	2130	—	—	—	47,000.—*	—	—
»	Long	10	4	—	—	M	—	—	—	—	—	—	—	—	—	—	—	—	49,000.—*	—	—
»	Sport	10	4	—	—	M	—	—	—	—	—	—	—	—	—	—	—	—	52,000.—*	—	—
Barre	8	4	4	61	120	M	4	C	SD	DB	765×105	9-11	4-4	8-11	1870	2400	13-5	14-2	19,500.—	26,000.—	—
Berliet	VIG	9	4	65	112	M	4	C	SD	FB	13×45	9-4	4-4	7-6	2080	2350	12-11	—	—	—	—
»	VIH	10	6	62	100	D	4	C	SD		14×45	10-0	4 4	10-8	2550	2560	15-0	—	—	—	—

Bugatti (Tourers)	44	3 litres	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	60.000.—*	—	—
» »	38	11	8	60	88	M	4	C	MD	FB	28×4,95	10- 3	4- 1	7 9	—	—	14- 6	—	53.000.—*	—	—
TF » CM »	38A	11	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	66.000.—*	—	—
» »	40	10	4	69	100	M	4	C	MD	FB	27×4,4	8- 5	4- 0	*	—	—	—	—	36.000.—*	—	—
» CM (Sport)	43	13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	165.000.—*	—
» CM »	43	2-3 lit.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	155.000.—*	—	—
» »	37	10	4	69	100	M	4	C	MD	FB	27×4,4	7-11	4- 0	12- 2	—	—	—	—	—	54.000.—*	—
TF » CM »	37	1-5 lit.	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	74.000.—*	—
» IM »	35A	2 litres	8	60	88	M	4	C	MD	FB	27×4,4	7-11	4- 0	—	—	—	12- 2	—	—	70.000.—*	—
» (Racers)	35	2 litres	8	60	88	M	—	C	MD	FB	710×90	7-11	4- 0	—	—	—	12- 2	—	—	120.000.—*	—
» CM »	35	2 litres	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	150.000.—*	—
TF »	—	2-3 lit.	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	140.000.—*	—
TF » CM »	—	2-3 lit.	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	170.000.—*	—
» »	39	1-5 lit.	8	60	66	M	4	C	MD	FB	710×90	7-11	4- 0	—	—	—	12- 2	—	—	135.000.—*	—
» CM »	39	1-5 lit.	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	165.000.—*	—
BUC (R)	TAV	10	4	72	105	M	4	RM	SD	—	—	10- 9	4- 6	8 3	1850	—	13 10	—	—	—	—
B.N.C.	Monza	7	4	60	97	M	3	C	SD	—	27×4	3-10	8- 6	—	924	1100	10- 9	12- 4	24.500.—*	29.500.—*	—
»	Monthéry	7	4	61	94	M	4	C	IC	—	27×4	3-10	8- 6	—	957	1140	10- 9	12- 4	34.500.—*	39.500.—*	—
»	Linas	7	4	60	97	M	3	C	SD	—	27×4,4	3-10	8- 6	—	945	—	10- 9	12- 2	24.500.—*	—	38.500.—*
»	Miramas	7	4	60	97	M	3	C	SD	—	27×4,4	4- 0	9- 4	—	990	—	11- 7	—	24.500.—*	—	39.500.—*
Brasier	TE 4	6	4	58	90	M	4	C	SD	FB	715×115	8-10	4- 0	8- 1	—	—	11- 2	—	18.000. *	26.000.—*	32.500.—*
»	TD 4	9	4	68	100	M	4	C	SD	FB	730×130	9- 9	4- 3	7- 9	1650	2310	13- 2	13- 9	21.500.—*	35.000.—*	42.000.—*
»	TB 4	12	4	74.5	120	M	4	C	MD	FB	815×175	—	—	—	—	3000	—	—	—	—	—
Buchet	C 3	6	4	60	100	M	4	C	CC	AR	11×45	—	—	—	1000	1600	—	—	15.300.—	19.700.—	23.300.—
»	B 4	10	4	67	110	M	4	C	CC	FB	13×45	—	—	—	1250	—	—	—	18.450.—	23.850.—	30.600.—
»	B 6	10	6	64	90	M	4	C	CC	FB	14×50	—	—	—	—	—	—	—	—	—	—
Benjamin	B 3	5	4	59.5	85	M	3	WD	SD	FB	27×4,4	8- 0	3-11	—	-	—	—	—	13.000.—	15.600.—	16,150.—
»	104 D	7	4	59	100	M	3	WD	SD	FB	—	9- 8	4- 0	—	—	—	—	—	—	—	18.600.—
Barré	65 F	8	4	67	120	M	4	C	SD	DB	760× 90	9- 5	4- 1	8- 1	1540	2420	—	—	—	—	—
»	57 AS	12	4	76	130	M	4	C	SD	DB	765×105	9- 8	4- 7	8- 7	1760	2820	—	—	—	—	—
»	80 CS	14	4	80	130	M	4	C	SD	DB	820×120	10- 2	4- 7	8- 7	1870	4070	—	—	—	—	—
»	70 S	10	4	70	105	M	4	C	SD	FB	765×105	10- 2	4- 6	8- 3	1430	2320	—	—	—	—	—
Chenard-Walcker	*	8	4	69	86	M	3	C	SD	FB	730×130	7- 5	4- 2	7*	1320	2156	12- 2	—	—	—	—
» »	* Normal	10	4	69	100	M	3	C	SD	FB	730×130	9- 1	4- 2	7- 5	—	2200	12- 5	—	—	—	—
» »	* Normal	11	4	59.5	130	—	4	C	SD	BF	820×120	9- 9	4- 8	8- 1	—	—	13- 3	—	—	—	—
» »	* 2 litres	11	4	69.5	130	—	4	C	SD	SB	820×120	10- 6	4- 6	7- 9	2530	—	13- 8	—	—	—	—
» »	* Normal	15	4	80	150	M	4	C	SD	SB	820×120	9- 9	4- 7	7-11	2585	3190	13- 8	—	—	—	—
» »	* Normal	16	4	79.5	150	M	4	C	SD	SB	895×135	10-11	4 8	7-11	—	—	13- 8	—	—	—	—
» »	* 3 litres	17	4	79 5	150	—	4	C	SD	SB	895×135	10-11	4- 8	7-11	2970	3410	13- 8	—	—	—	—
» »	* —	7	4	69	86	M	4	C	SD	FB	13×45	8- 8	4- 0	—	—	—	—	—	—	—	—
» »	* —	10	4	69.5	115	M	4	C	SD	FB	14×45	10- 3	4- 4	—	—	—	—	—	—	—	—
» »	* —	16	6	74 5	110	M	4	C	SD	FB	860×160	11- 4	4- 8	—	—	—	—	—	—	—	—
» »	* —	9	4	69	100	M	4	C	SD	FB	13×45	8- 4	4- 0	—	—	—	—	—	—	—	—
"Classic"	TP 24	11	4	75	120	M	3	C	I C	FB	—	9- 7	4- 3	8- 6	1890	—	13- 2	—	—	—	—
»	262	11	4	72	120	M	4	C	I C	FB	—	9- 7	4- 3	8- 6	1890	—	13- 2	—	—	—	—
»	4 SS 9	10	4	65	120	M	3	C	I C	FB	—	9- 7	4- 3	8- 6	1890	—	13- 2	—	—	—	—
Claveau	—	9	4	70	96	M	3	SP	SD	FB	730×130	10- 3	4- 9	—	—	—	—	—	—	22.900.—	36.000.—
»	—	4	2	—	—	M	3	SP	SD	FB	715×115	7- 5	4- 0	—	—	—	—	—	—	10.500.—	—
Citroen	B 15	10	4	70	100	M	4	C	SD	FB	730×130	9- 4	4- 3	8- 8	1700	—	—	—	18.520.—	—	—
»	B 14	10	4	70	100	M	4	C	SD	FB	730×130	9- 5	4- 1	7- 7	1500	—	—	—	16.700.—	20,180.—	—
Cognet de Seynes	B	6	4	57	110	M	4	SP	SD	FB	710× 90	9- 4	4- 1	8- 1	1430	2200	11- 8	—	—	—	—
Cobron	A 2	8	4	65	100	M	4	C	SD	FB	—	9- 5	4- 1	7- 7	—	2200	12- 5	—	—	—	—
Cyclecar (CM)	C	4	1	72	85	M	3	—	—	AR	650× 65	7- 5	3- 7	—	600	—	—	9- 9	—	—	—
Delaunay-Belleville	S 4	11	4	75	120	M	4	C	SD	FB	775×145	10- 2	4- 5	8- 3	2080	—	13.11	—	39.000.—*	—	—
» »	R 4	15	4	80	130	M	4	C	MD	FB	860×160	10- 9	4- 8	8- 8	2750	—	14- 2	—	44.000.—*	—	—
» »	S 6	17	6	75	120	M	4	C	—	FB	860×160	—	—	—	—	—	—	—	62.000.—*	—	—
De Cezac	DC 4	9/12	4	67	120	M	4	C	CC	AR	760× 90	9- 2	4- 3	7- 5	1430	2310	—	—	—	—	—
	E 1	8/10	4	64	93,5	M	4	C	CC	AR	710× 90	8- 8	3-11	7- 6	1210	1870	—	—	—	—	—
Delahaye	92	12	4	80	125	M	4	C	SD	FB	860×160	10-11	4- 8	8-10	2500	—	—	—	—	—	—
»	107	10	4	72	110	M	4	C	SD	FB	765×105	10- 3	4- 5	8- 4	1980	—	—	—	—	—	—

WOLBER · WOLBER · WOLBER

The BEST MOTOR AND CYCLE TYRE

Le MEILLEUR PNEU POUR VÉLOS ET MOTOS

El MEJOR NEUMATICO PARA VELOCIPEDOS *y* MOTOS

A. WOLBER
SOISSONS (FRANCE)

Graphos

BUILT FOR ROUGH ROADS.. THE 9 HP CLAVEAU

IS FITTED WITH FOUR INDEPENDENT ARTICULATED ROAD WHEELS. A PERFECT SUSPENSION ASSURING COMFORT OVER THE ROUGHEST ROADS. ROBUST CONSTRUCTION. DOUBLE STEERING. SIMPLE DESIGN. LOW CENTRE OF GRAVITY.

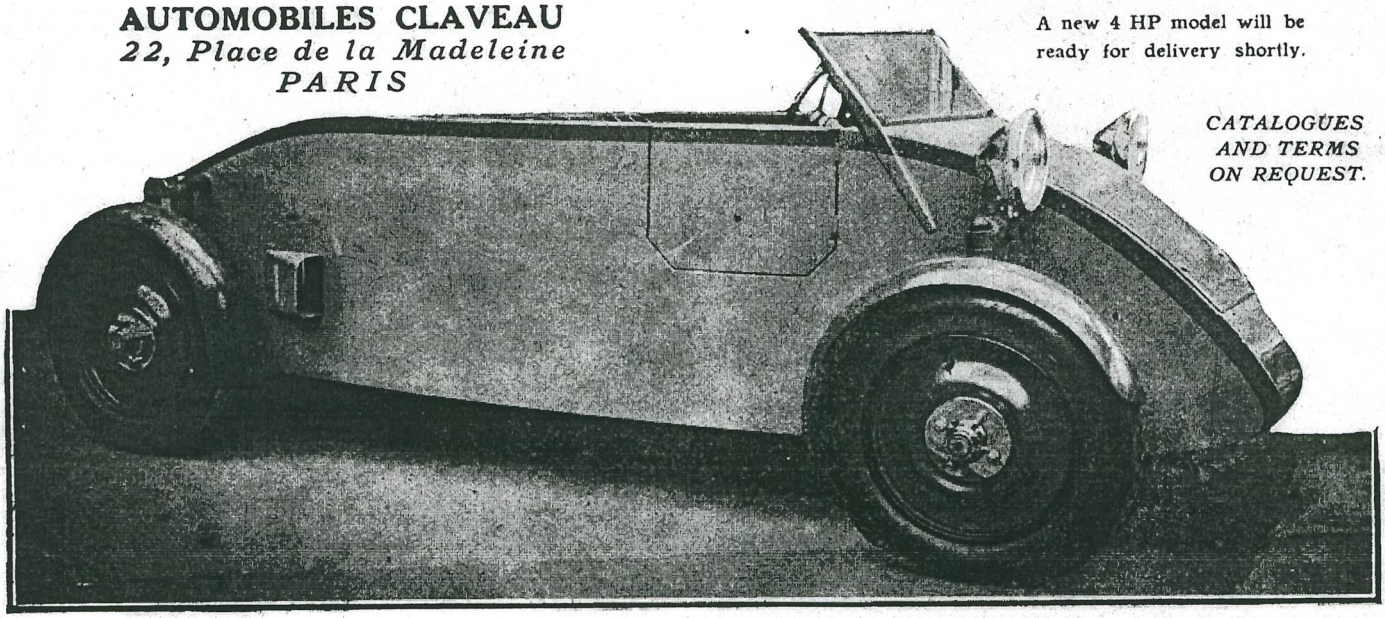
9 HP, 4 cylinders, 70×96, air cooled, detachable cylinder heads, electric lighting and starting, the chassis design embodies all the latest refinements, complete with all usual accessories. 3 speed gear box. Brakes on all four wheels.

The CLAVEAU has been constructed to fulfil the exacting requirements of the colonies, the 4 independent articulated road wheels prevent chassis distortion and afford the maximum comfort over the roughest roads. Wheel base 10' 2", track 4' 9", tyres 730×130.

AUTOMOBILES CLAVEAU
22, Place de la Madeleine
PARIS

A new 4 HP model will be ready for delivery shortly.

CATALOGUES AND TERMS ON REQUEST.



KINDLY MENTION "THE FRENCH AUTOMOBILE EXPORTER" *WHEN CORRESPONDING WITH ADVERTISERS*